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RAJNEESH DUBE

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A Book Bank in Action

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Editor :
SUTINDER SINGH

Selection of Vice Chancellors

B.D. Agarwala*

In any university set-up the vice chancellor is both the academic and the administrative head of the university. Some choose to call him the kingpin of the university. Refer to his duties, in any Act governing a university and you find that he acts as the Principal Executive and Academic Officer of the university. He is also made responsible for the maintenance of discipline in the university. In sum, his role is a crucial role. The selection, hence, to such an office is a matter of great public importance. Whatever be the method, it must conform to and result in the ultimate selection of a person who can with some certainty be entrusted to play this crucial role.

While selecting a vice chancellor, the acquisition of merely academic degrees or administrative experience, whether in the field of education or otherwise, may not by itself be enough. A person who is able to play this key role must have already established by his past record not only firmness in his decisions but also gentleness in his approach; must be a person who has acquired the quality of sensing a sensitive situation at the right time and at the same time the ability to take an instant decision befitting the situation and to the satisfaction of all, keeping the overall interest of the university in mind. It is too well known that many a time a right decision if not taken at the right time, results in a situation going out of hand. On the academic side, the desire to go ahead in programmes of teaching and conduct of examinations by the university is of equal importance. A person without a vision means only stalemate. A mere academic approach would serve no purpose for many a time administrative deftness is prime. In other words, a man of pragmatic approach and also possessing a real skill to resist the extraneous pressures and motivated suggestions emerging from the political platform — a person who though away from politics but at the same time having the ability to deal with such eventualities, is most suited. Above all, the paramount interest of the university as such has to be preserved and maintained.

Another aspect which needs highlighting, more particularly of late, is the need of such a person who has a genuine belief that things cannot be done alone but in a democratic way. In other words, he should be a person who believes in diversification, entrusting special jobs to special persons and then having full faith on the advice and suggestions rendered by them; for it is then alone that the whole system can move ahead. The element of dictatorship has to be thrown asunder. Though the university is an autonomous body, constituted as such but it should function as a democratic set up. The wrath or arbitrariness of a dictator is unacceptable both to the teachers and the students. What is required is a co-friendly approach. Each wants participation and it is only when participation is permitted that decisions can be made pursuant to participative deliberations and such decisions in their turn ensure proper compliance and implementation. A decision not so made may stand nullified by reason of its non-

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execution.

It is undeniable, therefore, that the selection of vice chancellors of universities is a matter of grave importance for it is the person who is so selected who really matters.

The question that, therefore, arises is : are we giving our due concern to this matter of selection of vice chancellors? Both the Parliament so far as the central universities are concerned, and, the state legislatures so far as the state universities are concerned have laid down by statutory provisions the mode of selection of vice chancellors of different universities. These provisions, though on the statute books for years have proved to be either inadequate and in some cases they are almost a farce or a make belief to the appointment of deserving vice chancellors.

In the case of central universities in India, the Visitor is the appointing authority of the vice chancellors, who in his turn has to act on the recommendations of the Prime Minister and his cabinet. A provision has been made in the case of some central universities for instance, the Aligarh Muslim University where under the statutes the Court has to recommend a panel of at least three persons from a panel of five persons recommended by the Executive Council. A provision has also been made that in case of non-approval of any of the persons recommended by the Court, the Visitor may call for fresh recommendations. In many a situation it has been found that even this by itself has not shown the desired results.

In the case of state universities, the various statutes are ample proof of the fact that the statutory provisions are so couched that the selection of the person to hold this office in reality and substance rests with the government and not with the Chancellor who himself holds office at the pleasure of the President and is a mere nominee of the President. The Governor being the Executive Head of a state government has under the Constitution to act on the aid and advice of the Council of Ministers. What advice is afforded to him alone matters. If we look back we can remind ourselves of various instances of selection of vice chancellors in different state universities where persons though otherwise not fit for selection as such, were favoured by the government of the state concerned.

To illustrate what has been said earlier, let us

refer to the U.P. State Universities Act 1973 which governs the state universities in Uttar Pradesh. The appointment of the vice chancellor has been provided for under Section 12 of this Act, material part of which is quoted herein below:

"Section 12. The Vice Chancellor — (1) The Vice Chancellor be a whole-time salaried officer of the University and shall be appointed by the Chancellor except as provided by sub-section (5) or sub-section (10) from amongst the persons whose names are submitted to him by the committee constituted in accordance with the provisions of sub-section (2).

(2) The Committee referred to in sub-section (1) shall consist of the following members, namely —

- (a) one person (not being a person connected with the University, an Institute, a constituent college, an associated or affiliated college or a hall or hostel) to be elected by the Executive Council (at least three months before the date on which a vacancy in the office of the Vice Chancellor is due to occur by reason of expiry of his term);*
- (b) one person who is or has been a Judge of the High Court of Judicature at Allahabad including the Chief Justice thereof nominated by the said Chief Justice; and*
- (c) one person to be nominated by the Chancellor who shall also be the convenor of the committee:*

(Provided that where the Executive Council fails to elect any person in accordance with clause (a), then the Chancellor shall nominate in addition to the person nominated by him under clause (c) one person in lieu of the representative of the Executive Council.)

(3) The committee, shall, as far as may be, at least sixty days before the date on which a vacancy in the office of the Vice Chancellor is due to occur by reason of expiry of term or resignation under sub-section (7), and also whenever so required and before such date as may be specified by the Chancellor; submit to the Chancellor the names of not less than three and not more than five persons suitable to hold the office of the Vice Chancellor. The committee shall, while submitting the names, also forward to the Chancellor a concise statement showing the academic qualifications and other distinctions of each of the persons so recommended, but shall

not indicate any order of preference.

(4) Where the Chancellor does not consider any one or more of persons recommended by the Committee to be suitable for appointment as vice chancellor or if one or more of the persons recommended is or are not available for appointment and the choice of the Chancellor is restricted to less than three persons, he may require the committee to submit a list of fresh names in accordance with sub-section (3).

(5) If the committee in the case referred to in sub-section (3) or sub-section (4) fails or is unable to suggest any names within the time specified by the Chancellor, (or if the Chancellor does not consider any one or more of the fresh names recommended by the Committee to be suitable for appointment as vice chancellor) another committee consisting of three persons of academic eminence shall be constituted by the Chancellor which shall submit the names in accordance with sub-section (3)."

It would thus be seen that a vice chancellor apparently, according to the provisions, has to be appointed from amongst the persons whose names are submitted to him by the committee constituted in accordance with the provisions laid down. This committee consists of three members, one elected by the Executive Council, one person who is or has been a Judge of the High Court including the Chief Justice and the third, a nominee of the Chancellor. The convenor of this committee is the nominee of the Chancellor. This committee has to recommend names of suitable persons, not less than three and not more than five, found suitable to hold the office of the vice chancellor. While submitting these names to the Chancellor, the committee has also to forward a concise statement showing the academic qualifications and other distinctions of each of the person so recommended but without indicating any preference. On receipt of the recommendations, if the Chancellor is of the view that any one or more of the persons recommended by the committee are not suitable for appointment, or if one or more persons recommended is not available, and the choice is then left to less than three persons, he may require the committee to submit a fresh list of names again in accordance with the same procedure as at the time of sending the initial recommendations. The committee thereafter either suggests fresh names or fails to do so within the time specified by the Chancellor. If the committee does send a fresh list of recommendations and again if the Chancellor does not consider any one or more of the fresh names

recommended to be suitable, then the Chancellor has to constitute another committee consisting of three persons of academic eminence, which committee shall then submit the names in accordance with the earlier procedure.

The Statutory provisions laying down the mode of selection though ostensibly prescribe an exhaustive procedure, apparently complete in itself, for the purpose of selection; yet if we look at it from a critical angle and closely examine the possibilities which may arise, we come to the only conclusion that it is again the will of the Chancellor, which in its turn means acting on the advice of the Chief Minister and his cabinet colleagues. The committee so constituted under sub-section (2) of Section 12 hence would be only on paper with its recommendations being rendered of no avail, in the event the Chancellor so decides. It is apparent on a plain reading of the provisions that in the contingencies mentioned under sub-sections (4) and (5), it is open to the Chancellor to by-pass the recommendations of the committee and to constitute another committee of his choice (though apparently consisting of persons of academic eminence) and then take his own decision.

The provision of a Judge of the High Court including the Chief Justice being one of the members of the committee was apparently made by the legislature for reason of the well accepted fact that his participation in the selection process will instil faith in the minds of the body of the teachers and the others constituting the academic world as then the decision will have the backing of a judicial approach. But as would be seen his participation as a member of the committee can be rendered of no consequence merely on the sweet will of a particular Chancellor.

Another aspect worthy of note is that there is no provision laying down any procedure for entertaining the names of the persons to be considered by the selection committee. What happens practically is that the persons who wish to be considered for selection make available to the government in its education department their bio-data. Some persons are not even in the know of such a requirement but for which they would have also furnished their bio-data. Some even may not like to send their bio-data on their own. Who will ask for their bio-data is a big question? Normally no such bio-datas are submitted either on their own or even asked for by the

Judge who is the member of the committee. It may be that someone sends his bio-data to the Judge. He will then forward the bio-data to the convenor of the committee. Similarly the member who is the nominee of the Executive Council would also send any bio-data received by him to the convenor. In other words all these bio-datas are collected by the convenor and presented during the deliberations of the committee. The committee is supposed to consider the pros and cons i.e. merits and demerits of each person. They are not in a position to know more details about them. In other words it is a curious method which militates against a fair and just decision.

This selection should in my view be on a broad basis so as to exclude chances of favouritism and political patronage and unguided by any other external factor. This can only be done provided a proper Commission is constituted for this purpose which may ensure a judicial approach to the matter.

The position in other states in respect of appointment of vice chancellors in state universities is not much different from what has been stated above. What is common is that the Chancellor who is the Governor of the state has been authorised to appoint the vice chancellors. The Chancellor is no different from the Governor himself. When the Chancellor thus exercises his powers, he acts on the aid and advice of the Council of Ministers with a Chief Minister as the head, as contemplated by Article 168 of the Constitution. This in its turn brings in political motivation and it has been found that in many a case of appointment of vice chancellors in different state universities (which need not be mentioned herein, it is a matter of common knowledge now), that these appointments were made not on the independent discretion of the Chancellor but guided or dictated under political pressure.

It is thus absolutely necessary in order to bring in the element of fairness in these appointments that subjectivity be minimised and Chancellor who is the Governor should be kept out of the way. It has rightly been pointed out by M.V. Pylee, a former Vice Chancellor of the University of Cochin, in connection with his suggestions for reforming higher education (*University News*, 33 (43), 23 Oct. 1995):

"Hence it is better to keep him out of the University system and appoint an eminent educationist, a distinguished public servant or a well known professional. There is not a single well

known University outside India which has a State Governor as its Chancellor".

It is apposite to notice herein that there has been much debate at different levels and forums as to whether the Chancellor being the head of an autonomous body like a university, should while exercising his powers in respect of appointment of vice chancellors of state universities, has necessarily to act on the aid and advice of the Council of Ministers with Chief Minister as the head or is it a function which has to be exercised by him in his discretion. This debate remains unsettled till date and the leaning has been more towards a view that he has to act on the aid and advice of the Council of Ministers.

Pylee has also advanced a very good suggestion that the Centre should take the initiative to constitute National Higher Education Commission and it is this Commission which should be entrusted with the preparation of a panel of well qualified and suitable persons fit for appointment as vice chancellors of different universities in the country. When a vacancy arises in the office of a vice chancellor in a particular university it should be left open to the state concerned where the university is located to select one person out of the panel. Rightly said this would eliminate political considerations in the selection of a person and would lead to appointments of vice chancellors possessing high qualifications, both scholarly and administrative, as are required for the discharge of the duties of the office of the vice chancellor. It is only then that the chosen vice chancellor can act as the real kingpin of the university.

Lastly it need be emphasized that the heads which matter should meet frequently and effectively, at the earliest, hold seminars and discussions on the subject and invite suggestions from meaningful persons to devise a line of reform so that this big malaise is put to an end, for it is then alone that the universities will produce more scholars and administrators for the ultimate good of the country.

TO OUR READERS

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communication should, however, be brief and to the point.

Reforming the Examination System

Rajneesh Dube*

I vividly remember the day I joined Mahatma Gandhi Kashi Vidyapeeth as Registrar almost two years back. The atmosphere was surcharged with examination fever, one group of students and teachers actively demanding postponement of the examinations which were scheduled around a month ahead. The Vice Chancellor, an elderly distinguished looking gentleman, promptly designated me as the Controller of Examinations. It did not take me long to realise that heavy is the head that wears the crown. I was surprised to learn that the university had a system of annual examinations, followed by what was called examination of left-over students, essentially meant for those who could not take the first round for some reason. Not only this, a third round of Supplementary examinations used to follow, and if a particular student still failed to clear, he was allowed the opportunity of re-evaluation. Needless to say, the entire process worked round the year with a clique of student leaders, teachers and examination section employees enjoying the visible and invisible fruits. Naturally, the session was terribly late.

Fortunately for me, the Executive Council in its last meeting had taken a decision to do away with this pernicious multiple examination system. Later on, with the help of local police and district administration, I could ensure a strict implementation of the same. Today, two years and two examinations later, the session stands fully regularised. However, regularisation is not an end in itself. If our ultimate objective is quality evaluation, we have to address the inherent snags in the present day examination system, which call for an urgent reform.

The Awasthi Committee, constituted by the Government of U.P. in its recommendations has outlined extensive measures to ensure smooth and fair conduct of examinations. Going into this aspect again would be an avoidable duplication. We would go into detail about three major functional areas involved in the examination system viz. (1) Design of Examination Papers, (2) Appointment of Paper Setters and Examiners, and the issue of Confidentiality; and (3) Evaluation System and Evaluation methodology. But, let us first have a look at the Examination System itself.

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As on date, most of the universities have annual term-end examinations in all the three Arts, Science and Commerce streams. Only a few professional courses are modelled on a 6 month semester system. It is proposed to introduce semester system not only in courses like B.J., B.Ed. and B.Lib.Sc. but also at postgraduate level in the three fundamental streams. A semester provides a more intensive course module, simultaneously ensuring an acceptable work-load for the student because of its narrow focus. There is a rider, however. This system can run smoothly only in those departments where a certain level of academic and student discipline can be maintained. At Vidyapeeth, for example, the M.B.A. programme is running on schedule, whereas the B.Ed. course, patterned on the same semester system, is way behind. The semester system is fraught with the risk of session delay. Moreover, to take care of the logistics aspect of two cycles of examinations in a year, all such universities need to have a separate post of Examination Controller, in exclusive charge of the necessary arrangements to be done. The actual conduct of the examination also has to be decentralised to some extent.

Another deficiency in many universities is lack of regular sessional examinations at the postgraduate level. These not only test a candidate's attentiveness in the classes but also act as an instrument of on-going feedback, thus inculcating a degree of discipline among students. It is suggested that these sessionals should carry a weightage of 10% to 20% in the overall assessment. Since in such cases, the evaluation would be internal, objective type questions should be used to avoid undue pressure on the examiners, which brings us to the question of 'Design'.

Design of Question Papers

Many universities are still continuing with the traditional descriptive type of question paper with an element of wide choice, a kind of '5 out of 10' pattern. This system has three inherent weaknesses. One, there is a stereotyping of questions with a high degree of predictability. Two, because of the wide option available to the student, selective reading gets encouraged to the detriment of development of a holistic perspective. Last, but not the least, such a long-answer type of question paper places a heavy bias on expression (linguistic skills) and presenta-

tion (hand-writing, usage of sketch pens).

To take care of these shortcomings, a mixed type of question pattern is suggested for most subjects, the notable exception being Literature. This implies a combination of Multiple Choice Questions (MCQ), Short Answer type questions (SAQ) and Long Answer description questions (LAQ). These three sections of a paper would carry almost equal weightage. Such a distribution would test all the three basic abilities of information, application and expression. The MCQ and SAQ sections may be made compulsory to ensure coverage of the entire course, whereas the LAQ section might enjoy an element of choice. A related spin-off of such a paper design would be the pressure on the faculty to cover all the chapters thus ensuring regular classes. Obviously, the modified pattern has to be cleared through the Board of Studies and then communicated to the students at the beginning of the session itself.

Another pertinent step would be to place a word limit for descriptive answers. This would have three distinct advantages. One, thinking and organising time available to the student gets enhanced. Two, prioritisation capacity is tested and precision rewarded. Lastly, the evaluation of such answers becomes easier and less time consuming. Usually, a two hundred word answer limit is considered sufficient. In this context, developing comprehensive question banks and updating them periodically, assumes significance. True, sporadic attempts in this field have been made by several institutions, but an acceptable system has failed to evolve. Such an exercise may be undertaken at the university level; or better still, state level workshops can be held, where teachers and subject-specialists from different universities put their heads together. Subgroups for each paper can be constituted. This would on one hand facilitate brain storming, idea reconciliation, integration and differentiation and on the other check pre-conceived or stereotyped perceptions which are resultant to the present day in-breeding in our universities. Simultaneously, appropriate model answers can also be designed in most cases. This question bank can be computerised and stored on a floppy disk for circulation to all universities for usage, which brings us to the next issue.

The Issue of Confidentiality

Confidentiality is largely a function of human character, but certainly the external variables can be minimised, if not eliminated altogether, through careful planning. For example, the present practice

in most departments is that a panel of three names for paper-setting is proposed by the Board of Studies, out of which one is approved by the Vice Chancellor. Two distortions in this system came to my knowledge. One, in some cases, the Board suggests only a single name. The second is the tendency among the Vice Chancellors to mostly approve the first name figuring in the panel. These two practices dilute confidentiality to a considerable extent and should be discouraged.

A related issue is that of moderation. A few universities have done away with this practice, but to my mind moderation is desirable because it ensures a double verification of the questions and the chances of the paper being balanced and finetuned to the curriculum — being neither too tough nor too easy and devoid of any vague or ambiguous question — are high. The usual practice is for the Head of a Department to moderate all the papers of his subject. This is done in the Confidential Section. It is expected that the name of the paper setter shall not be disclosed to the moderator, but in practice this becomes difficult. As a result, the Head has complete knowledge of the paper and the paper setter, a fact which is known to students and teachers alike. This makes the Head extremely vulnerable to outside pulls and pressures and the sanctity consequently does get jeopardised at times.

The moot question therefore is — why not have external moderators exclusively? After all, at least half the paper setters are outsiders, as per university rules. The Board of Studies can propose a panel of moderators along with the panel of paper setters without any extra effort. However, the Heads would not take to this suggestion kindly and it would be difficult to push the proposal through the Examinations Committee. A suggested via-media is to have an arrangement where the papers designed by Internals would be moderated by the Head and the papers of Externals would be moderated exclusively by External Experts. This would preserve the authority of the Head of Department while simultaneously insulating him from too much of pressure, because in this system, no single person would be in a position to do the favour of making a student 'pass' or achieve a high grade!

And lastly, the sacred cow called Confidential Printing. This is a job usually entrusted to the Controller. For obvious reasons, in many universities, a separate secret account is opened for the purpose and after the operation is over, the details, bearing verification of the Controller and the approval of

the Vice-Chancellor, alongwith requisite bills, are sealed in an envelope. This transaction is immune from routine financial audit for security reasons. As a Controller of Examinations, I came to know of the inconsistency in printing charges and standards not only within my own university, but also between different universities, because of lack of any clear cut norms, guidelines and procedures in this vital area.

A couple of urgent measures are suggested to check this aberration. One, exhaustive norms for confidential printing should be evolved at the state level. This would include item-wise provision for composing, printing, paper charges, proof-reading, processing, package and transportation and miscellaneous expenses for a given standard. Secondly, a comprehensive list of Recognised or Approved Printing Presses should be issued by the central or the state government, as the case may be, after a thorough scrutiny of the credentials of individual firms. This information would be available in the Confidential Sections of all universities. Confidentiality would, however, become meaningless if the sanctity of the evaluation system is not maintained.

Evaluation System and Methodology

The system of central evaluation is fast gaining popularity in many universities due to various inherent advantages. It is quick and maintains better confidentiality. Moreover, the quality of evaluation becomes superior due to three reasons. One, evaluation under the supervision of the Centre Superintendent. Two, minimisation of outside pressure. Three, the availability of disturbance-free environment resulting in greater concentration of the examiner. All it entails is a little extra expenditure incurred on the T.A./D.A. to be paid to the examiners. Based upon our experience of the last two years, the following measures are suggested for effective and efficient functioning of the Central Evaluation system:

1. Create excellent physical micro-environment conducive to efficient evaluation;
2. Provide adequate security arrangements at the central evaluation premises;
3. Appoint a trusted senior professor as Centre Superintendent to be assisted by one or two teachers of at least Reader grade;
4. Handpick the examination section team for central evaluation. An employee or an examiner who enters the premises on a given day, is not allowed to leave until the day's job is over;

5. Inform the examiners in time by registered post with a provision for acknowledgement. Prepare an alternative back-up list of examiners;
6. Shuffle the answerbooks at random before distribution to the examiners for evaluation;
7. Vest the Centre Superintendent with the authority to get an answerbook re-evaluated by a second examiner, if he is of the opinion that the award is disproportionately high. In this case, the awards of both the examiners be averaged for the final grade. If the difference between the two is significant, say more than 25% of the initial award, the matter is to be referred to the Head of the Department and the Vice Chancellor for necessary action;
8. Allocate limited number of copies to an individual examiner in a day. At Vidyapeeth, the norm is 75 answerbooks for undergraduate level and 50 answerbooks for postgraduate level and that too in two or three instalments;

This is not to say that central evaluation should be enforced in hundred per cent of cases. Where number of students is few (say less than fifty), or the paper is highly specialised in nature (viz. social work, environment, specialisation papers in M.A.) and examiners in nearby centres may not be available, external evaluation should be resorted to.

A word about current evaluation methodology. It is highly subjective in nature due to lack of model answers and standardised norms for marking. This can improve only when exhaustive question-answer banks are prepared and the paper designed thereupon with a harmonious MCQ, SAQ, and LAQ MIX. The common biases which afflict our examiners are the normal distribution curve approach, the polarised marking system, the error of central tendency alongwith the constraints of time and mood fluctuations. All of these can be contained with a little effort at planning and design.

With the introduction of computers in the field of data processing, evaluation of MCQ pattern of question papers has become extremely easy, quick and precise. Appropriate software for computerised tabulation chart and marksheet preparation has also been developed. All it requires is suitable training and orientation of the existing staff. In a nutshell, technology, system design and personnel planning form the tripod of a responsive and efficient examination system, which this country so desperately needs.

A Book Bank in Action

Amjad Ali*

Introduction

Books are the best companions. There are books for every reason. In our times, the process of educational instruction mainly depends upon the written word and the easy availability of books ensures a better understanding of reality. The invention of printing press brought about mass production of books. As a result, libraries were established and the importance of home reading was also realized. At the opening of the London Library in 1841 Thomas Carlyle said "a man can do more with a book in his own apartment in the solitude of one night than in a week in such a place as the British Museum." (*Encyclopedia of Library and Information Science* vol. 14 Page 249)

Book Banks are synonymous with the lending libraries that used to provide the reading materials to its members for home reading. In the past, they were generally attached with the monasteries and charitable institutions but later emerged in the schools also. Their objective was to help the poor and the needy students.

In India, the very first book bank among technological institutions was established at the Zakir Husain College of Engineering and Technology of the Aligarh Muslim University in the year 1964. The idea behind it was to help the students of B.Sc. Engg. course who mainly belonged to the lower middle class families of the society and were unable to purchase textbooks for their studies.

Development of the Book Bank

The necessity of establishing a book bank for the Engineering College was realized in the Aligarh Muslim University in the early 60's. Accordingly, the Vice Chancellor on persuasion of the Engineering College authorities diverted half of the grant made available to the College Library under the Third Five Year Plan to establish the Book Bank. The College Library ranks second among libraries on the campus in terms of size and services and the funds thus diverted affected other important services

of the library for the time being.

The Book Bank has grown over the years. Now, it forms a very important part of the Library which holds over one lac books and is manned by a staff of 26. The Book Bank caters to the academic needs of about 1500 students by circulating among them around 25,000 books annually. Over 35,000 students have already been benefited so far. Earlier, only B.Sc. Engg. students were eligible for the facility but from the session 1993-94 onwards the B.E. Evening students have also been extended this facility. Each student is issued a complete set of textbooks for the full academic year which are returned by them to the Book Bank only after the annual examinations are over.

The Book Bank scheme of the Engineering College proved to be so successful that within a decade of its inception book banks got recognition at the national level. The 20-point programme of the Late Prime Minister Mrs. Indira Gandhi incorporated provision to help the needy and poor students by providing textbooks to them. The University Grants Commission vide their letter dated 7-2-1973 also agreed to provide financial assistance for the establishment of book banks in Engineering and Technological institutions / departments of the universities. It was desired of the institutions to purchase multiple copies of textbooks and other reference books needed by the students and loan out to them on long term basis.

The University Grants Commission also made available a grant of Rs. 40,000 to the individual institutions. For the Book Bank of the Engg. College, October 24, 1976 proved to be a remarkable day as on this day the Uttar Pradesh Chief Minister Mr. Narain Dutt Tiwari visited the Library and sanctioned a grant of Rs. 1.5 lac for construction of a block for the Book Bank.

The first step in the development of a book bank is to acquire an adequate collection of textbooks. As many copies of a particular book are purchased as the number of students in a class so that all the students have the prescribed textbooks. For this, the Chairman of various departments are consulted to ascertain the books recommended for reading. Once

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Aligarh - 202 002

the recommendations are finalized, the book suppliers are intimated about the needs. They are invited to quote the maximum percentage of discount. A comparative statement of all the suppliers and the rates quoted by them is prepared and orders are placed to only those suppliers who allow the maximum rate of discount. In normal circumstances, it ranges somewhere between 15 to 35% thus saving about 25% of the original cost of a book at the time of its procurement.

Financing

The Book Bank works on a no profit, no loss basis by creating a revolving fund to meet its day to day expenditure. The main source of income is the hire charge of textbooks by students at the rate of 10% of the original cost of books. The membership charges also contribute to its resources at the rate of Rs. 20 per student which are 1325 in B.Sc. Engg. and about 300 in BE Evening course. The high rate of discount offered by the book suppliers against supply of the multiple copies of textbooks also contributes at the rate of about 25% of the original cost of books. Textbooks have a life span of about 5 to 10 years but there are books that are in active circulation for two decades. Such books have contributed many times of their cost to the Book Bank in the form of the hire charges. Further the current prices are applicable for recovery in case of the loss of books at any stage.

The last 30 years have witnessed a major change in the working of the Book Bank. The University has switched over from the semester system to the annual one. Similarly, the five years course of B.Sc. Engg. has been replaced by 4 years. This has affected the Book Bank adversely. Earlier 10% hire was chargeable for every semester. Accordingly, books were hired twice thus contributing to its income 20% of the cost of a book within a year—that has now been reduced to 10%. With the elimination of the semester system, there has been a 100% decline in the income by hire. Further, the reduction in the time span of the B.Sc. Engg. course has deprived the Book Bank in terms of the reduction of students' strength, at the rate of 20% as one batch of the students does not exist now. The Book Bank might have earned more and provided still better services had the hire been retained at a rational rate of 20% of the cost of books.

Table 1 shows the progress of the Book Bank since the time of its inception :

Table 1 : Progress of the Book Bank

Sl. No.	Year	No. of Books in Book Bank	No. of Books Added	Average Annual Increase
1.	1970	8,040	875	175
2.	1975	12,040	4,000	800
3.	1980	20,708	8,668	1,734
4.	1985	31,000	10,292	2,058
5.	1990	40,161	9,161	1,832
6.	1995	46,710	6,549	1,310

Source : Book Bank's Records.

Table 1 shows decreasing rate of annual additions from 1985 onwards. This is because of the hike in the cost of books. Two important factors affect the prices. The price revision in the respective currencies and the devaluation of the Indian Rupee in the foreign market.

Table 2: Yearwise escalation in the price of a Book Published by the Sage Publications

Sl.	Year	Price in \$	Conversion Rates	Price in Rs.
1.	1989	36.00	17.61	630.00
2.	1990	42.95	18.90	764.50
3.	1991	42.95	20.10	864.00
4.	1992	46.00	31.50	1,155.00
5.	1993	46.00	32.50	1,527.00

Source: Catalogues of Sage Publications.

Now, let us see the comparative income of the Book Bank during the last five years. Data are available for the financial years 1991-92 to 1995-96 as shown in the Table 3:

Table 3: Income of the Book Bank

Sl.	Financial Year	Income of Book Bank	Total Books in Book Bank	Annual Increase
1.	1991-92	1,32,606.69	41,233	1,072
2.	1992-93	1,64,947.80	42,186	953
3.	1993-94	1,60,761.76	43,328	1,142
4.	1994-95	2,17,977.05	44,952	1,624
5.	1995-96	2,36,539.93	46,710	1,728

Tables 2 & 3 reveal that the comparative increase in respect of the cost of books over the last five years is 240% whereas the income of the Book Bank has grown during the same period by 178% only. The situation has been very alarming between 1990 and 1995 as during this period the Indian currency devalued more in comparison with the other currencies. The technical literature is generally imported from the international market and this change has affected the Book Bank very seriously.

Another factor that affects the Book Bank most is the fast expansion of knowledge and availability of increased literature in the areas of science and technology. This expansion is more evident in Electronics and Computer Science disciplines. Earlier, the expected life of a computer system was five years but it has been reduced to three and a half years now. This means revision of the courses of studies in the areas after every three years. This naturally involves replacement of older books by the new ones containing the nascent thoughts. The foreign agencies generally introduce barriers in dissemination of the technical information with the intention to encash the maximum possible price on the inventions taking place in their countries. That is why the new technical books cost more.

In the beginning, the hire rate was 20% per annum. It decreased to 10% in the Semester System but the comparative income remained the same as

the textbooks were hired twice adding 20% of their cost annually. During the first decade, the income from the hire charges remained Rs. 1,00,629.16 or Rs. 8385.5 annually. It is expected that the total income of the book Bank will cross the mark of 3 lacs this year. The main sources of income are the hire charges of books by the students of B.Sc. Engg. and B.E. (Evening), the membership fee collected from them, hire charges of textbooks for preparation of the supplementary examinations and the amount of fine collected for delay in returning the books. Table 4 shows the hire charges to be collected from the students of B.Sc. Engg. only for 437 individual titles out of 462 as recommended for the courses.

In addition to the above income, the Book Bank earns through the membership charges at the rate of Rs. 20 per student which are about 1600 in B.Sc. Engg. as well as in B.E. The hire charges collected from the B.E. students are at the rate of 20% of the cost of Books.

It is worth mentioning here that about 2 to 3% students do not turn up for the membership but it is also a fact that this loss is compensated by the hire of books to students for preparation of the supplementary examinations. The following (Table 5) is the summary of the total expected income during the session 1996-97.

Table 4 : Expected Hire Charges from B.Sc. Engg. Students During 1996-97

B.Sc. Engg.	I Year	II Yr.	III Yr.	IV Yr.	Total
Mechanical	7921.50	23106.00	29770.95	15158.40	75956.00
Chemical	7921.50	8537.40	5708.00	26573.00	
Civil	7921.50	6182.40	6369.00	7479.10	27952.00
Computer	7921.50	9706.20	5274.00	3423.00	26324.70
Electronics	7921.50	13912.50	6912.20	5558.40	34304.60
Electrical	7921.50	10928.00	8096.80	5705.40	32651.00
Architecture	-	1050.00	1260.00	-	12310.00
Grand Total :					2,36,071.30

Table 5 : Total Expected Income during 1996-97

S.No.	Source of Income	Income in Rs.
1.	Hire of 537 titles by 1325 students of B.Sc. Engg.	2,36,071.30
2.	Hire of remaining 25 titles from B.Sc. Engg. students at an average rate per book.	13,501.40
	Membership of 1325 B.Sc. Students (and)	25,500.00
	280 B.E. Students	5,600.00
	Approximate hire charges of Books from B.E. students at the rate of 20% per annum.	35,000.00
Total : Rs. 3,16,672.70		

Services

After supply of the textbooks and their necessary processing the books become ready for circulation. Students are intimated about their availability. They are allotted time slots for the purpose of issue. This practice takes place in the beginning of the sessions.. The staff of the Book Bank also estimates the hire charges which are deposited by the students alongwith the membership fee at the rate of Rs. 20 per student.

At present, the amount of hire charge is 10% of the original cost of the books being issued. On production of the cash receipts, the students are handed over the books which remain with them for the full academic year and are returned only after their annual examinations are over.

The Book Bank has a very busy schedule during the start and the end of the academic sessions as almost all the transactions take place during this

period only. Luckily, it is a dull time for the Library and the additional staff requirement of the Book Bank is met by the staff deputed from the Library temporarily without affecting the normal functioning of the Library.

A set of rules has been designed for the smooth functioning of the Book Bank as given in the Annexure.

At the time of inception of the Book Bank, there were only three branches of courses in Engineering. Since then four other courses have been introduced. Accordingly the number of students has grown from about 700 to 1400. At that time approximately 5 books were available on hire by one student. This number has gone up to 16 now. This indicates over three fold increase in the issuable books. Tables 6 and 7 illustrate the comparative increase in the number of books hired by the students during the first five and the last one year of the existence of the Book Bank.

Table 6 : No. of Books Issued to Students yearwise From 1965-70

Sl. No.	Year	I yr.	II Yr.	III Yr.	IV Yr.	V Yr.	Total
1.	1965-66	169	1076	536	273	-	2054
2.	1966-67	269	875	646	446	63	2299
3.	1967-68	253	1822	1336	1156	458	5425
4.	1968-69	691	1983	1752	1525	889	6840
5.	1969-70	505	2153	1783	1639	1220	7300
Total :							23,868

Table 7 : Approximate Number of Books to be Issued to B.Sc. Engg. Students During 1996-97

Branch	I Yr.	II Yr.	III Yr.	IV Yr.	Total
Mechanical	900	1989	1274	1600	5,763
Chemical	900	465	459	578	2,422
Civil	900	1035	780	986	3,285
Computer	900	896	509	570	2,870
Electronic	900	945	576	576	2,997
Electrical	900	1088	1020	1386	4,394
Architecture	-	105	61	-	166
Grand Total :					21,897

Note: This excludes the books to be issued to the B.E. (Evening Course) and also for the supplementary examinations of B.Sc (Engg.) and B.E. (Evening) courses.

As illustrated above, the total number of books issued during the first five years and those expected to be issued during 1996-97 is almost the same which means a five fold increase. About half of the collection has become obsolete due to the changes in the courses of study while in the beginning all of them were circulated. The reason of this loss is that the Book Bank works in accordance with the academic needs. The collection is developed keeping in view the strength of students in a particular course and the number of books required for them.

Table 8 : Number of Books to be Issued to Students Coursewise During 1996-97

B.Sc. Engg.	I Yr.	II Yr.	III Yr.	IV Yr.	Total
Mechanical	15	17	14	20	66
Chemical	15	15	17	17	64
Civil	15	15	13	17	60
Computer	15	32	14	19	80
Electronics	15	27	16	18	76
Electrical	15	17	15	18	65
Architecture	-	5	3	18	26
Grand Total					437

Table 9 : No. of Students Coursewise During 1996-97

B.Sc.Engg.	I Yr.	II Yr.	III Yr.	IV Yr.	Total
Mechanical	60	117	91	80	348
Chemical	60	31	27	34	152
Civil	60	69	60	58	247
Computer	60	28	36	30	154
Electronics	60	35	36	32	163
Electrical	60	64	58	37	219
Architecture	-	21	21	-	42
Grand Total :					1325

The number of books issued to the 1st year students is the same for all the branches since the course is common for all of them. But the fluctuation in strength from 2nd year leads to inconvenience for arranging books accordingly. All that is done in the interest of students, although, the Book Bank pays for it heavily.

Modernization

The Book Bank has more repetitive jobs compared with the Library. Presently, the record of books and students is being maintained in ledgers.

The same information is copied from one page to the other. The sets of 15 books are issued to about all 350 1st year students of B.Sc. Engg. which involves writing details including author, title, price, accession numbers of 21,600 books and 1500 students annually for the purpose of issue only. The same books are returned in the end of the session thus doubling the workload.

There are hardly 350 individual titles of books. The Book Bank can be computerized by keying in 350 records of books and the equal number of students' profiles related to the first batch. It need not enter 21,600 + 1500 records in full as handled manually at present. This can be achieved by creating two database files one each for books/documents and students/users. Provision can be incorporated for recalling books by accession numbers and students by their College numbers as both are unique. The membership information can be carried over from 1st year to the IV year and all details can be manipulated as per the needs of issue, return, cost

Concept

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The Agro-Climatic Regional Planning Project (ACRP) of the Planning Commission was initiated with a view to provide technical and scientific inputs for the Agriculture & Allied sectors during the VIII plan. The ACRP recognize in an explicit manner the nature of the local resource endowments and constraints of the agro-climatically homogenous regions, which in most cases cut across the states.

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calculations, etc. This will immensely reduce the workload and permit speed and accuracy in the work thus reducing the expenditure.

Conclusion

The Book Bank at the Zakir Husain College of Engineering and Technology has flourished over the last 30 years of its existence. Many Book Banks have emerged in the University since then. It has improved its services by developing a large collection of textbooks and offering more relaxations to the students out of the funds generated by the Book Bank itself. There are problems also. The fast change in technology results in the revision of courses and outdated textbooks within a short span of time. About half of the total collection of the Book Bank has become obsolete because of this change. The escalation in prices of books also comes in the way of development. Strengthening Book Bank is a step towards self reliance in education. It needs a rational increase in its resources and application of computers for better services.

Annexure

RULES FOR BOOK BANK

- * 1. Book Bank is entirely for the benefit of the students of B.Sc. Engg. Z.H. College of Engg. and Tech. A.M.U. Aligarh.

2. A student can become the member of the Book Bank on payment of Rs. 20/- as membership fee once in an academic year
3. Books will be issued on submission of Cashier's Receipt of 1/10 value of the total cost of Book(s) which is the hire charge of books.
4. Books will be issued strictly on showing the valid current Identity Card.
5. All books shall be returned within 5 days after examination is over. In case the books are not returned in time, a fine of 20 paise per day per book (for one month) and after one month at the rate of Re 1/- per day per book shall be charged till the book(s) is/are returned. The fine/cost of books shall be deposited in cash with S.O. (Account) Principal's Office.
6. Complete set of recommended books for each academic year will be issued to the student from Book Bank.
7. Books will be re-issued for supplementary examinations.
8. Where books have been marked, defaced, spoiled or damaged, the Principal or his nominee shall at his discretion either impose a fine or charge the cost of book(s). In the latter case the book shall be returned to the member.
9. The responsibility for the proper custody of the book(s) is of the member concerned.

* The Book Bank facility is being extended to the students of B.E. also from the sessions 1993-94.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be contacted
Nov. 23-27, 1996	National Seminar on Biotechnology . New Trends and Prospects	Theme: Education and Research in Biotechnology	Gurukul Kangri University, Haridwar	Prof. D.K. Maheshwari, Department of Botany, Gurukul Kangri University, Haridwar - 249 404.
Nov. 26-Dec 1, 1996	IAEWP Eighth World Congress to be held at Zagreb, Croatia	To promote International Peace	International Association of Educators for World Peace (IAEWP)	Dr. Nenad Javornik, IAEWP, Ulica Crvenog Kriza 14/1, Zagreb 100 00. Croatia OR Dr. Surya Nath Prasad Reader, Janata College of Education, Post Box No. 113, Chandrapur - 442 401, Maharashtra
Dec. 5-7, 1996	ICDE Asia Conference on Open and Distance Education	Theme: Open and Distance Education	International Council for Distance Education Oslo, Norway	The Convener, ICDE Asia C/o AIAET, F-5-E, DDA Munirka, New Delhi-110 067
Dec. 28-30, 1996	International Conference on Information Technology in Education and Training	Theme: Information Technology in Education and Training	All India Association for Educational Technology, New Delhi.	Dr. D.N. Sansanwal, School of Education, Devi Ahilya University, A B Road, Indore-452 001.
Jan. 29-31, 1997	16th Annual Convention and Conference on Access to Electronic Information	To focus on present changes, challenges, responsibilities and future probabilities in accessing electronic information	Society for Information Science, Bhubaneswar	Dr. P. Padhi C/o Department of Library & Information Science, Utkal University, Vani Vihar, Bhubaneswar-751 004

My Favourite Reading

Chandrani Biswas*

"My Favourite Reading" seems to be an immensely tricky and subjective proposition. The reason probably lies in my own diverse reading habit, which is not restricted merely to books of a literary nature, but to anything that is palatable to my taste. To choose my favourite books from a wide range of subjects such as sociology, history, art, politics, media and management was indeed a difficult task for me. I have nevertheless ventured undaunted and chosen two very different books from two diverse cultures. The books are *Things Fall Apart* (1958) by Chinua Achebe and *Krishnakanta's Will* (1878) by Bankimchandra Chattopadhyay.

While *Things Fall Apart* provides a graphic picture of a microcosmic community caught up in the throes of colonisation, *Krishnakanta's Will* portrays the social and moral dichotomies of men and women living in a strictly codified society in the 19th century. But why did I choose an African book in the first place? It is possibly because *Things Fall Apart* clarified my own vision of African fiction in a very potent fashion. Images of Africa which so consistently have been projected to us filtered through European scholarship largely consist of certain hackneyed stereotypes which need to be exploded. Our perception of Africa is often limited to images of the dense forests, black magic, the beating of drums and colourful tribes that inhabit the continent. Not very many years ago, it was commonly believed that Africa had no past and therefore no history. But in fact all these notions need to be revised and reconstructed as we are gradually becoming aware of the socio-economic, historical and cultural diversities of the vast continent.

Even then, we Indians tend to think and talk in terms of broad generalisations like the African society, African personality or African culture. We normally tend to think of Africa as an undifferentiated socio-cultural continuum, a static unchanging society. Africa seems to be presented as an all embracing primary monolithic category or as an idyllic paradise, devoid of all kinds of heterogeneity. However, contrary to all such notions, Africa was and

remains a continent comprising several sovereign, independent countries with different faiths, linguistic and ethnic groups, cultures, social mores and a rich history of their own.

Chinua Achebe's first and most impressive novel *Things Fall Apart* (1958) depicts the essential predicament of man caught in the complex web of a situation where two cultures and two opposing worldviews clash. Belonging to the first crop of African novels, it has a definite sociological basis. Yet it would be an error to ignore Achebe's exploitation of the tragic potential latent in the character of Okonkwo. The novel thus operates at two levels—it is on the one hand a graphic portrait of the Ibo community and on the other a complete presentation of a man in action in living reaction to his fate. The novelist probes into the conscience of the protagonist Okonkwo, depicting his struggle against the destructive forces of an alien civilization. *Things Fall Apart* as the very title suggests is concerned with the disintegration of a particular community in African society with colonial aggression. Society is depicted here as a living organism and the individual's interaction and interrelation in that society constitutes the action of the novel.

Okonkwo, the protagonist of the novel is portrayed as a man who has been brought up in a community which has immense faith in the individual quality of manliness. It is in fact with a sense of innate shame of his past that he starts his life—he needs to live down the shame of his father. Okonkwo from the very beginning suffers from an identity crisis. His father Unoka, a lazy old farmer has left him no honourable legacy. Okonkwo gains and establishes his identity by virtue of his industrious nature, hard work and independence of spirit. Thus he is introduced in the beginning of the novel as a heroic figure — "Okonkwo was well known throughout the nine villages and even beyond. His fame rested on solid personal achievements". He is an embodiment of Ibo virtues, yet he turns out to be a lonely marginalised figure at the end of the novel.

Okonkwo sets his goals very high shutting everything out of view, only aware of himself. His overriding ambition constitutes his 'hubris', thus setting the stage for a tragic career. Okonkwo is

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impatient with his wives, children and unsuccessful men of his clan, to the extent that he wishes all of them to fit into a scheme of things he himself has set for others — "Okonkwo wanted his son to be a great farmer and a great man. He would stamp out the disquieting signs of laziness which he thought he already saw in him." He is a fighter to the bone, a nonconformist. Since he has started his life from scratch, he fears no evil for he has experienced the best and worst of the seasons—Okonkwo remembered the first tragic year of harvest when he started, by borrowing seeds from Nwakibie. "Since I survived that year; he always said, "I shall survive anything".

Achebe shows the essential division in Okonkwo's nature — the man in public and the man in private, the sociable person and the lonely individual. He is governed by a burning desire to become one of the successful, powerful and affluent lords of the clan of Umuofia "... his whole life was dominated by fear, the fear of failure, and of weakness..... And so Okonkwo was ruled by one passion—to hate everything that his father Unoka had loved. One of these things was gentleness and another was idleness". The meaning he attaches to manliness is violence. This insistence on this quality leads him to be a threat, and a menace even to his society. Okonkwo's blind desire to assert his manliness is demonstrated most powerfully in the killing of Ikemefuna whom he loved as his own son. Yet in spite of his love, in spite of Ezendu's warning he becomes an instrument of the heinous crime of murdering Ikemefuna, a crime which alienates him from his own son Nwoye. Like Coleridge's *Ancient Mariner*, Okonkwo is lonely in his sin and suffering. As a social being, his responsibilities and duties are at times things he dislikes. We are reminded of Stein's advice to Conrad's hero Jim in the novel *Lord Jim* where he says "In the destructive element immerse". The inevitability of immersing in the destructive element is perhaps ingrained in Okonkwo too.

It is not Okonkwo alone that Achebe portrays. Okonkwo is a part of the social machinery, he can thus be seen only in relation to the broader view of society. The society Achebe portrays is a patriarchal society—authoritative, strong and a community characterised by conflicting tendencies. The traditional Ibo society that emerges is a complex one : ritualistic, and rigid, in yet many ways flexible. A child is a precious part of this society yet the inno-

cent living child Ikemefuna is denied affection, even life by the rigid tribal laws and customs. Outwardly, Umuofia is a microcosm of peace, unity and harmonious communal activities. But there is a latent undercurrent of the individual's personal anguish and conflicts. Nature, the source of life is the means of subsistence as well as the source of fear. In this society is seen the earliest forms of animism and fetishism. Thus Eginma has buried her 'iyi-uwa' which is a pebble near the orange tree. It is a fetishised symbol of the ogbanje children. It is a world of the medicine men, of Agbala, of the Earth Goddess and the Evil Forest that Achebe portrays. This has much in common with the Indus Valley civilization where the various forces of nature were worshipped in the form of the Mother Goddess, three headed Pashupati and even Indra. The harvesting ceremony and the New Yam Festival" to honour the earth goddess and the ancestral spirits of the clan" have great affinity with the Indian festivals of harvesting. The New Year marked a new beginning and a new life for the people reminding us also of the Red Indian societies Thoreau speaks of in New England. Thoreau spoke with zest of a "busk" in which certain primitive people periodically threw away all their old possessions and purged themselves.

The role of women in Umuofian society is crucial. Okonkwo's women, his wives are battered, bullied and insulted. While his fear of 'feminine' weakness makes him uncommonly severe, the villagers disapprove of his beating his wives too hard in The Sacred Week. Ekwefi's love for Okonkwo is convincing, it is felt especially where the couple stands before the shrine for their daughter. 'Mother is supreme', say the Ibo. In this world, women's lives complement those of their husbands. When old Ogbnefi Ndulue dies, his first wife dies too. It was always said that they "had one mind". This aspect of the position of women in Ibo society is also similar to the Indian context where *shakti* is being worshipped. The 'Mother Goddess' is the chief source of power. In Rig Vedic society, the women even accompanied the men in the performance of sacrifices and *yajnas*. For without them the men would be deprived of the fruits of their good deeds. Yet it is ironical too that in both the African and the Indian situation, the status of women in reality is extremely low.

An individual's actions are tied up with the fate of society. They are an intrinsic part of the wider

(Contd. on page 18)

SPREADSHEET

Social Indicators of Development for India through the Planning Era (6)

Item	Pre-Plan	II Plan	III Plan	IV Plan		V Plan	Annual Plan	VI Plan		VII Plan	Annual Plans		VIII Plan (Projections)	
	1950-51	1960-61	1965-66	1970-71	1975-76	1978-79	1979-80	1980-81	1984-85	1989-90	1990-91	1991-92	1992-93	1996-97
Education														
Literacy (in per cent terms): Total	18.3	28.3	*	34.5	*	*	*	(36.2) 43.7	*	*	52.2	52.0	*	75.0
Male	27.2	40.4	*	46.0	*	*	*	(46.9) 56.5	*	*	64.2	*	*	*
Female	8.9	15.3	*	22.0	*	*	*	(24.8) 29.9	*	*	39.2	*	*	*
Population Census data														
Rural	*	*	*	23.7	*	*	*	29.7	36.1	*	44.5	*	*	*
Male	*	*	*	33.8	*	*	*	40.8	49.7	*	57.8	*	*	*
Female	*	*	*	13.1	*	*	*	18.0	21.8	*	30.4	*	*	*
Urban	*	*	*	52.4	*	*	*	57.4	67.3	*	73.0	*	*	*
Male	*	*	*	61.2	*	*	*	65.8	76.8	*	81.1	*	*	*
Female	*	*	*	42.1	*	*	*	47.8	56.4	*	63.9	*	*	*
National Sample Survey data														
Rural	*	*	*	*	*	*	*	*	33.9	37.5	*	*	*	*
Male	*	*	*	*	*	41.5	*	*	45.2	48.4	*	*	*	*
Female	*	*	*	*	*	18.4	*	*	22.2	25.9	*	*	*	*
Urban	*	*	*	*	*	*	*	*	61.6	64.5	*	*	*	*
Male	*	*	*	*	*	66.8	*	*	70.1	72.3	*	*	*	*
Female	*	*	*	*	*	50	*	*	52.3	55.9	*	*	*	*
Gross enrolment ratios as per cent to total population														
Primary schools (6-11 years): Total	43.1	62.4	67.0	76.4	(1975-76)	79.3	*	80.5	93.6	99.9	101.0	102.7	*	*
Male	60.6	82.6	96.3	92.6	*	95.7	*	95.8	110.3	115.5	115.3	116.6	*	*
Female	24.8	41.4	56.5	59.1	*	62.0	*	64.1	76.0	83.6	85.6	88.1	*	*
Middle schools (11-14 years): Total	12.9	22.5	30.8	34.2	*	35.6	*	41.9	48.1	59.2	60.1	61.2	*	*
Male	20.6	33.2	44.2	46.5	*	47.0	*	54.3	61.3	73.0	73.4	74.2	*	*
Female	4.6	11.3	17.0	20.8	*	23.8	*	28.6	34.9	44.6	46.1	47.4	*	*
Secondary school (14-17 years): Total	5.3	*	*	18.5	*	18.8	21.9	17.3	23.5	26.6	28.6	*	*	*
Male	8.7	*	*	26.8	*	25.6	22.9	23.1	31.7	35.0	37.3	*	*	*
Female	1.5	*	*	9.8	*	11.6	13.9	11.1	14.7	17.7	19.4	*	*	*
Pupil-teacher ratio														
Primary schools	33.0	36.0	39.0	39.0	(1975-76)	37.0	38.0	38.0	41.0	43.0	42.0	43.0	*	*
Middle schools	24.0	31.0	33.0	30.0	*	30.0	33.0	33.0	36.0	37.0	37.0	38.0	*	*
Secondary schools	25.0	25.0	26.0	26.0	*	26.0	26.0	27.0	28.0	29.0	31.0	32.0	*	*
School drop-out rates (per cent)														
Primary	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Boys	*	65.3	68.6	66.1	58.1	*	*	48.3	*	46.0	*	*	*	*
Girls	*	75.0	78.7	74.4	68.7	*	*	58.2	*	50.0	*	*	*	*
Total	*	*	*	67.0	*	*	*	*	*	48.0	*	*	*	*
Middle	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Boys	*	31.5	34.2	35.1	34.0	*	*	27.6	*	61.0	*	*	*	*
Girls	*	39.0	40.5	40.8	41.4	*	*	34.3	*	70.0	*	*	*	*
Total	*	*	*	79.0	*	*	*	*	*	64.0	*	*	*	*
Newspaper circulation														
(number per 1,00,000 population)	*	1206.0	1282.0	1650.0	1513.0	1974.0	2152.0	2210.0	2559.0	2754.0	*	*	*	*

*denotes information not available

Source: EPW Research Foundation: Social Indicators of Development for India - 1, *Economic & Political Weekly*,

May 14, 1994.

Notes (i) Years representing as column heading do not always correspond to the respective Five Year, or, Annual Plan periods

(e.g. the year 1978-79 for the Fifth Plan period).

(Concluded)

(ii) Again, the data presented generally pertain to the years indicated in the table though in some cases they pertain to the periods close to those years.

(Contd. from page 15)

social fabric. Thus the priest rebukes Okonkwo — "..... The evil you have done can ruin the whole clan. The earth goddess whom you have insulted may refuse to give us her increase, and we shall all perish". The clan has an important role to perform on the occasions of marriage, death and settlement of disputes. Ngugi wa Thiong'o has referred to Okonkwo's society as 'emergent feudalism', in some Marxist schemes of historical evolution, 'higher barbarism' would be a more accurate classification for nine villages perhaps verging on the 'slave civilization' which had appeared in other parts of West Africa². Achebe highlights aspects of the Ibo culture which bear strong resemblance with ancient Greek civilization. The Greeks believed in the concept of a 'healthy mind in a healthy body'. Contests as wrestling, running, music and poetry dominated their social life. Pindar mentions "The glorious limbed youth" who could even stop a war. Here in the Ibo community, there are wrestling matches, and social status achieved by prowess at games, public debate, sacrifice of cocks, Oracular counsel, personal and household gods. Certain terms occurring in the novel recall Graeco Roman antiquity; 'priestess', goddess', 'oracle', 'hostage', 'shrine' and even 'abomination' in the sense of a religious offence requiring drastic purification.

Okonkwo's success rested primarily on the honour he brought to his village by throwing Amahize, the great wrestler. Okonkwo lives in a society where the survival of the fittest and most competent in the struggle for existence is acute. Okonkwo wishes to rise higher and higher up in the social scale by his personal achievements. It is ironical indeed that Ezevedu who had advised Okonkwo not to kill Ikemefuna becomes a potent cause for Okonkwo's exile. His cycle of an undisturbed peaceful life, of fame and success is broken. The death of two young boys cause Okonkwo's ruin. Ikemefuna's death wastes him spiritually. Ezevedu's son's accidental killing becomes the cause of Okonkwo's exile. Achebe here seems to be working out the pattern of a Greek tragedy. Okonkwo's relationship with his own father Unoka was an embittered one, being reflected in turn in his relationship with his own son Nwoye. This is an Oedipus touch in this relationship. This breakdown of familial ties seem to symbolize and pre-empt the larger disintegration of society itself. The final snapping of the filial bond is directly related to the killing of Ikemefuna—"As soon as his father walked in that night, Nwoye knew

that Ikemefuna had been killed and something seemed to give way inside him, like the sapping of a frightened bow". Nwoye, a sensitive, young boy holds certain customs and rituals of his community in question especially the casting away of twins into the village. Nwoye is attracted towards the liberating influence of the new religion. He feels constricted, bogged down and choked in the atmosphere of his community. Thus he takes to Christianity—"The hymn about brothers who sat in the darkness and in fear seemed to answer a vague and persistent question that haunted his young soul — the question of the twins crying in the bush and the question of Ikemefuna who was killed. He felt relief within as the hymn poured into his parched soul". Nwoye's act of conversion symbolises a revolt against his father as well as a rejection of the society he embodied. Achebe presents a three fold disintegration in his novel — the dislocation of society, the disintegration of the family, and that of the individual.

The advent of the white man and his religion is supposed to be an ill omen for the community. One of the most enduring images of the novel is the white man's bicycle tied to a sacred silk cotton tree who has been killed since the Oracle warns that his kind will 'spread destruction'. But if one white man goes another comes. In Achebe's third novel, *Arrow of God* is portrayed the same struggle of the confrontation between the tribal civilization and Christianity. The white man is a painful but unavoidable fact of life. Moses Unachukwer says - "I have travelled in Otu and I have travelled in Igbo, and I can tell you there is no escape from the white man. He has come". Nweke Utpaka replies that "the white man is like a hot soup and we must take him slowly-slowly from the edges of the bowl". The conflict between the tribal life and Christianity has already begun when Okonkwo returns from his exile. He faces an altered society, a society which allowed a place for white missionaries. "There were many men and women in Umuofia who did not feel as strongly as Okonkwo about the new dispensation". Thus Okonkwo "mourned for the clan, which he saw breaking up and falling apart". He thus takes recourse to violence. He does not realize that Christianity is the catalyst merely and not the primary cause of things falling apart. Umuofia was already disintegrating and re-forming for Christianity would not have spread if it did not fill a pre-existing need. If things fall apart it is because "the center cannot hold", because Okonkwo lacks in balance to maintain the precarious tension which forcefully holds in place

his chi, family and clan. He thus turns out to be the marginalised figure struggling against contrary values and the new ideals. His suicide is thus a refusal to usher in a new order and the collapse of the old order he represents. In *No Longer At Ease* Achebe depicts the tensions of Obi Okonkwo caught up in a world of flux and an ideal of firm moral order. He is firm in between two sets of values and "His mind was troubled not only by what had happened, but by the discovery that there was nothing in him with which to challenge it honestly".

Things Fall Apart conveys that sense of 'felt life', as Henry James called it, of a disintegrating society and the fragmentation involved in the process. It is not enough for the literary artist to combine the skill of his medium with a wish to interpret the experience. Achebe is fascinated and involved by the experience of the society he depicts and by his masterful stroke conveys his interpretation of the tragic sense of doom brooding over the clan, with Okonkwo as the representative figure. The individual character is representative of the social dilemma of his times and this accounts for the strength of Achebe's novel — it explains what for the readers is the weakness of his second novel: *No Longer At Ease*, and the achievement of his third novel, *Arrow of God*.

Krishnakanta's Will first serialized in *Bangadarshan* (1875-77) was published in 1878. In the novel, Bankimchandra Chattopadhyay polemizes the question of human love and temptation where social authority played an important role. The theme of the zamindar's desires for a beautiful widow was dealt by Bankimchandra in an earlier novel also, *Bishabriksha* where Nagendranath, the married zamindar is attracted to the widow Kundanandini and eventually marries her.

The 'widow', a recurrent figure in Bengali fiction is a peripheral or marginalised figure in the well ordered social structure. The widow because of complex socio-religious notions occupies a neutral position in the social network of an organic village community. Social relations are restricted to them and particularly marked by avoidance of relationships. Rohini, the young widow in *Krishnakanta's Will* is beautiful, sensuous and attractive in spite of her widowhood, she did not quite adhere to the prescriptive rules of society. She wore black bordered sari, bangles and chew paan. She was a great cook and loved gossiping. Her beauty and attitude to life seem to be a "deviance" of a kind in a strictly ordered normative society.

Gobindalal's wife Bhramar, the dark, slender

devoted housewife conforms to the image of the "Grihalaxmi". Bhramar and Rohini epitomise the two concepts of Indian womanhood and the two centres of opposition in the novel.

The binary opposition between sensuousness and serenity, pleasure and happiness, passion and love has been maintained to differentiate Rohini and Bhramar. Rohini is associated with sensory perceptions, the colourful aspects of nature—blooming flowers, waters of the Baruni lake, humming bees and the cuckoo song. Bhramar on the other hand who is neither pretty nor attractive is presented in a domesticated manner and in the simplicity and serenity of nature. Her world sustains by deriving a vitality from her husband's world, her identity is derived from her husband's identity and her beliefs are nourished by her husband's beliefs. She enjoys a position of power in the family by virtue of being the wife of the rich landlord yet 'beauty', 'wealth' and 'accomplishments' define a woman's identity in terms of her relationship with her family and immediate kins. Bhramar instils jealousy in the hearts of the village women as also Rohini who exclaims "Alas, what crimes have I committed to be cursed to lead the life of a widow. Why am I to lead such a painful life in spite of my beauty. What attributes do woman like Bhramar have to be classed with so much happiness".

Rohini evidently suffers from an innate sense of deprivation and does not want to be "role-set" as a widow in a strictly ordered Hindu society. Rohini's attempt to steal the will is crucial to the narrative. The theft is committed not out of love for Haralal or for money but motivated by an overwhelming desire to rise above one's status as a widow. She constantly attempts to exercise her right to "choose" a better way of life. Remarriage with Haralal would provide her the opportunity of escaping from her circumscribed status. Whether motivated by class aspirations or by the mere desire to enjoy the pleasures of life, Rohini not for once thinks of resigning to fate and lead a quiet life of 'dharma'. Rohini's activities as described in the novel include cooking, washing, gossiping but never is she seen worshipping her Grihadevata. She is rarely seen in the closed space of a room or a house. She is constantly moving about breaking barriers and exercising her choice in every context.

Rohini has the courage to confess her desires and ignore her dharma. She is bewildered at her own behaviour when she exclaims — "I am a widow. I have lost my dharma, my happiness, my life,

what shall I cherish? "Yet these words really do not project her sufferings because even without Gobindalal, she has very little happiness to cherish. What she thinks as her life or 'dharma' is only a burden for her that makes her existence cumbersome. Her relationship with Gobindalal however seems to be doomed from the very beginning of the novel. Yet Bankimchandra bifurcates the readers' responses by directing their sympathy towards her and then calling her an ogress. Rohini, for Gobindalal is the 'chirarahasyamayee', ever elusive kind of woman with a dream like quality about her, like heroines in Sanskrit dramas. She is inscrutable, untameable, wild and uninhibited. Bhramar on the other hand is domesticated, and bound by the ties of devotion, love and responsibility. Bhramar represents' bondage in love, Rohini "freedom". Gobindalal cherishes his relationship with Rohini as a different kind of relationship outside the socially approved roles in the family or immediate kins.

In the 19th century socio-political milieu, Bengali intellectuals were excluded from the arena of the power games in world politics, the nation building policies or adventurous overseas trade that the European imperialist forces revelled in. This sense of exclusion and otherness led the novelist of the 19th century to allow the individual some kind of freedom to exercise his choice in a relationship outside marriage. Since the work-a-day world was too restricted for the average man, he could strive to exercise his freedom only in matters of love and that too in a fictional world of emotions where the novelist chooses love as a means of liberation from the social world.

Both Rohini and Gobindalal attempt to carve out 'alternative space' for themselves in a rigid role oriented social order. Rohini refuses to adhere to her dharma and escapes the situation by resorting to Gobindalal. Gobindalal too throws off the garb of the patriarch and householder or 'Grihastha' to pursue his own sexual interests. Bhramar has no opportunity to carve out any 'space' for herself. She is conditioned to a series of received roles as Krishnakanta Ray's daughter in law, Gobindalal's wife or Madhavinath's daughter. She is both socially and spatially circumscribed. Bhramar's choices are limited more on account of her status and power position. After the acquisition of Krishnakanta's property, her alienation is all the more complete as she becomes the property owner and decision maker. A 'role-conflict' emanates from the opposition between her social roles as a wife and her financial role as a property owner. Bhramar can ironically

make decisions about property matters but not about her life because her social and economic roles are constantly clashing with each other. The power position is reversed when Gobindalal is now at the receiving end which provides him a pretext to move out of the bondage of marriage.

Rohini can move about freely in Gobindalal's garden and the neighbourhood but Bhramar is spatially circumscribed within the four walls of the house. She is seen either in the company of maids or relatives, either in the kitchen or in her own room. Bankimchandra in an article entitled "Samya" objects to the practice of "keeping women confined to their homes like animals in an animal house. We shall move freely in heaven and earth like the Chatak bird, but they shall remain confined to one and a half katha of land like some one kept in a cage". Bankimchandra, here asks for more space, more air and more mobility for women whereas he couldn't grant mobility to both the women in his novel equally, on account of social and class constraints. Bhramar, the 'sati' addresses Gobindalal "— If you want to leave me for no fault of mine, do so. Remember, God is the witness of all that you do I swear by God if I am a sati, if I am faithful to you in heart and soul, we shall meet again. I will live till that day" Bankimchandra's exaltation of "Satittwa", a woman's unflinchingly chaste devotion to her husband raised a cherished domestic virtue applauded in the Hindu tradition to the level of the highest ideal. Yet satittwa is not the last word for Bhramar. Bhramar's letter is the emergence of a woman's rebellious voice against the traditional Hindu ideal of unconditional devotion of the wife to her husband. She protests in her own way in the letter where she questions the institution of marriage, "Perhaps you think that my devotion for you is unshakable, and my faith in you limitless. That was what I too once thought. But now I realize that is no longer true. So long you were worthy of trust, I trusted you. But now I have neither devotion nor trust for you any longer". Bhramar's letter is reminiscent of Madhusudan Dutta's *Birangana Kavya* consisting of heroic epistles from the most noted Puranic women to their lovers or lords. Bhramar's letter pre-empted Rabindranath Tagore's short story *Strir Patra* where the wife rebels against the compulsory standards of behaviour imposed on her by the patriarchal order.

Bhramar also reminds the readers of Indira who feels whether it is worthwhile to get back her husband at all in another woman-oriented novel by Bankimchandra, *Indira*.

The preservation of woman's sexual chastity in 19th century Hindu Society is coterminous with the preservation of the social order. Rohini and Bhramar represent two polemics of an unresolved argument — a woman's desire to satisfy her own will and a woman's commitment to her social role. It is naturally the second kind of woman who is the 'ideal type'. Bhramar actually unconsciously collaborates with various forces for the perpetuation of patriarchy. She is granted the label of 'satitwa' for her self-effacing nature and self-control. Interestingly for granting the woman a kind of abstraction, they are denied individuality. Men "make" history, women "occur" in myths. The words 'make' and 'occur' are important because whereas men are subjects, women are mere 'objects' in a historical process of change. There is an essential dichotomy in Rohini or Bhramar's protests. Bhramar's power position emanates from a 'crisis situation' when Gobindalal abandons her. She feels uneasy in her new role. Bhramar feels nostalgic about her earlier domesticated role of a wife. She wants to be caged and happy. Had Bhramar been loved by Gobindalal till the end, she would have been satisfied with her 'samsar - dharma'.

Thus her protest is extremely contextual and 'functional'. Had Rohini not been a widow, she may not have protested against the social order. Bhramar's protest is against the injustice of her husband, Rohini's quest is not for a specific social identity but merely to fulfil her desires or was it also to avenge society for the injustice meted out to her? Yet in spite of the limited nature of her protest, Bhramar can exercise her right to choose 'satitwa' as a therapeutic device to cure her wounded psyche.

Gobindalal transgresses the code of ethics or dharma but he can resort to 'sannyas' which provides a means of escape for him. But the women in his life whom he caused much suffering had to die. Bankimchandra provides a way for the Gobindalals of the 19th century in his discourse but Rohini's or the feminine voices of dissent inevitably had to die though Bankimchandra wryly comments in "Samya", "Men are not governed by the same hard and fast rules as women are. If a woman commits the slightest fault in matters of chastity, she cannot even show her face to others A man however can do such things in the open, can go back to his house in splendour and mirth driving a phaeton in the wee hours of the morning to provide his wife with occasion for touching the dust of his feet; his wife should be very happy at this".

The Widow Remarriage Act was passed in 1956,

though the opposition against widow remarriage was as strong as ever. Yet the central proposition in *Krishnakanta's Will* is not really widow remarriage but the presence of Rohini. The problem would have unquestionably remained the same had the women been unmarried or married to someone else. The laurel ultimately had to go to the 'sati'. It is this suffering of the Vaishnav Padavalis that ultimately inspired Bankimchandra to extol the greatness of love in suffering than fulfilment. The tragedies in *Kapalkundala*, *Bisbriksha*, *Sitaram*, and *Krishnakanta's Will* are all traced to unrestrained passion. Rohini says "I am burning with desire day and night. Water lies within my reach but I do not hope to touch it in my lifetime", but Bankimchandra in *Sitaram* says, "The satisfaction of desires for any purpose other than dharma is sin" The negation of passions in fiction can be accounted for two reasons. The Indian novelists of the 19th century were trying to counteract the colonialists' argument that the Indian civilization was barbaric, passionate and devoid of moral standards. The second reason was that the 19th century Indian novelists imbibed much from the models of the 18th century social novels of England. Bankimchandra's novel dichotomy reminds us of Richardson's prudential morality that forced him to portray Clarissa Harlowe in his novel *Clarissa*, as the angel dying a Christlike death.

Bankimchandra provides an idealized version of social reality in his novels where he depicts ideal zamindars, beautiful women, quarrelsome maids in a fairytale like manner though the world evoked by him is the 19th century, traditional Hindu society sustained by the codes of 'dharma', 'paap', 'punya', 'satitwa' and 'lokachar'. The authorial voice plays a crucial role in the narrative for Bankimchandra often vacillates between his pretense of being a mere recorder of events and a controlling manipulator and master narrator. The technical strategy of establishing a rapport with the reader is reminiscent of both Fielding and Sterne. The novelist and reader form a happy community and are collaborators to decide the fate of the characters.

There is an element of inevitability about Gobindalal's leaving his village because the circular movement can be traced in his return from Prasadpur. Prasadpur quite evidently epitomises a sterile existence estranged from the vitality of community life and nature which bores both Rohini and Gobindalal leading to a frozen relationship. The 'upanyas form' which infact is an ever changing Protean form is influenced by the dramatic performance in Bankimchandra's novels. At one point of time, he even says, 'Let the curtain fall'.

What does the novelist attempt in the novel? Does he posit a social ideal before his readers to justify his case by saying transgression is a part of the larger moralistic scheme of the rise and fall of man? Bankimchandra is not perpetuating the feudal values or prescriptive norms of his age but merely reflecting the complexities of an age. Evidently beyond a point, the line which divides 'dharma' and transgression was elusive to Bankimchandra. His characters are symptomatic of the complex dialectics of the major contradictions and fallacies of his age. As a creative writer and a thinking man, he constantly seemed to have been at odds with his preference for artistic truth. Transgression, however tempting was never acceptable. Ultimately, the social order had to be restored.

Both the novels discussed above raisesome very sensitive issues in human life, focusing specifically on the problem of alienation. Okonkwo in Achebe's novel fails to survive in a fast changing world driven by the forces of colonisation and capitalism, as a result of which he is alienated. The women on the other hand in Bankimchandra's novel are alienated for different reasons. Rohini is marginalised on account of being a widow. Her widowhood leads her to protest against the injustices of an unfeeling society, through her illicit relationship with Gobindalal. Bhramar's protest lies in her alienation as an abandoned wife and her refusal to come to terms with her status. Both Chinua Achebe and Bankimchandra Chattopadhyay handle the themes of colonisation, oppression and inequality among genders in a masterful way, which account for the abiding popularity of these two novels even today.

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A Bootstrapping Effect

Professor V.S. Ramamurthy, Secretary, Department of Science and Technology, Government of India, delivered the Convocation Address at the Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram. He said, "One of the distinguishing features of twentieth century science is the availability of sophisticated instruments. In general, a new discovery often leads to the design and development of instruments with new and/or improved capabilities. In their turn, new instruments lead to new discoveries. There exists thus a unique bootstrapping effect between research and instrument development." Excerpts

I am a physicist by profession. My interaction with the medical community in the past has not been very close except perhaps once in a way as a patient. At the same time, I am not unaware of almost a revolution which is taking place in the medical field during the last hundred years or so due to a strong interaction between the medical community and the general scientific community. This is the increasing role of sophisticated tools and instruments in medical diagnosis and treatment. One of the distinguishing features of twentieth century science is the availability of sophisticated instruments. In general, a new discovery often leads to the design and development of instruments with new and/or improved capabilities. In their turn, new instruments lead to new discoveries. There exists thus a unique bootstrapping effect between research and instrument development. The recognition of the potential of these developments in instrumentation for medical diagnosis and treatment has also been not found wanting. In some cases, this recognition has almost been instantaneous.

1995 is the centenary year of the discovery of x-rays. While the discovery itself was accidental, the recognition that it is a powerful tool in the hands of a surgeon

was instantaneous. Today, while the x-ray unit is a standard facility in any hospital, its cousin, the Computed Tomography System can perform a whole body scan and locate within a few seconds tumours, lesions as small as a few millimetres, blood clots, birth defects in brain and body, etc. Also, the imaging techniques have not been limited to x-rays alone. The magnetic resonance imaging, the ultrasonic imaging, the positron emission tomography are all fall outs of important developments in other areas of scientific research.

Nuclear medicine needs no introduction to this audience. While the word nuclear brings to ones' mind the bomb, the power reactors, discussions on non-proliferation, the environmental issues etc., nuclear medicine is making fast but silent progress. Lasers in medicine is another area witnessing rapid changes. Laser surgery is just one of many of its applications in medicine and in my opinion, the simplest. Interaction of lasers with biological systems is far from understood. In the next few years, we are sure to see several novel applications of lasers in medicine.

The role of trace elements in human, animal and plant health needs also no introduction. You may recall the path breaking in-

vestigations of Professor Valiathan on the role of trace elements in fibrosis of the heart and the root wilt palm disease of coconut plants. The need for modern instruments like the ICP spectrometer, accelerators, radioactive tracers, etc. for carrying out such studies are obvious.

These are but only a small number of random examples but are adequate to highlight the important role of sophisticated instruments in medical investigations. How are we as a nation responding to these developments? First and foremost, our medical community is well aware of these developments. Design and fabrication of medical instruments is a multidisciplinary activity involving basic sciences, electronics and instrumentation and computer technology. These instruments are, therefore, in general, expensive. In spite of the high costs involved in several of these cases, many of the hospitals have imported and installed state of art equipments. Several efforts are also underway to design and fabricate these indigenously.

While availability of sophisticated and state of art instruments is important, effective utilisation of the same and availability to a large cross section of population at affordable costs demands the existence of the necessary infrastructure to operate and maintain these instruments. Capability to field upgrade the instruments and to provide import substitutes prolongs substantially the operating life of the instruments and reduces operating costs. This again requires a strong interaction between the users in the medical profession and scientists trained in medical instrumentation. Efforts to generate such manpower are just beginning to be made.

CAMPUS NEWS

Fully Literate India by 2005 A.D.

Mr. S.R. Bommai, Human Resource Development Minister, said there was an urgent need to make the spread of elementary education and adult literacy a mass movement and called for evolving "a strategy that will take us into the next millenium". He was addressing a national conference of educational experts held in New Delhi recently. "Our vision is to make the whole of India literate by 2005 A.D.", Mr. Bommai said.

He said the focus had necessarily to be on drop-outs, working children, girls who could not attend formal schools, particularly those belonging to Scheduled Castes and Scheduled Tribes and disadvantaged groups.

Mr. Bommai asked the experts to come out with suggestions to make elementary education a "child-centred and activity-oriented exercise."

The approach should create parental awareness leading to community mobilisation, improvement in the schooling methodology so as to make the school an attractive place, learning a joyful experience.

The conference was attended by about 60 educational experts, including vice chancellors of several universities across the country.

Referring to the Government decision to make primary education a justiciable right, Mr. Bommai said the Supreme Court had already taken the initiative in this regard.

It was high time that a legis-

lative code was formed so that free and compulsory primary education could be moved from directive principles of State policy to the fundamental rights. "Perhaps, for too long, we have procrastinated on this issue", he remarked.

Highlighting the importance of adult literacy, Mr. Bommai said there was a need to help all those who had remained outside the school system and had been denied education due to societal and economic constraints.

About 56 million non-literates had been made literate under the adult education programme of the National Literacy Mission (NLM) covering 22 States and four Union Territories. However, 44 million non-literates needed to be made literate by 1997, he said and called for concretised plans and a missionary zeal to pursue them.

The Minister of State for Education, Mr. Muhi Ram Saikia, addressing the conference, said the government was committed to making the nation fully literate and sought the States' cooperation.

JNP Science Centre for Non-formal Education

The Jawaharlal Nehru planetarium in Bangalore is reported to have set up a unique science centre, the first of its kind in the country, to help further their research pursuits. The planetarium honorary director Mr. C.V. Vishveshwara said the idea for such a science centre, which will be a nu-

cleus to provide non-formal education to the aspiring students, took its final shape a few months ago.

Presently, according to Mr Vishveshwara, nearly 100 students were undergoing this novel non-formal education and the numbers, he added, will be restricted to that number as the planetarium did not have the sufficient infrastructure facility to accommodate more pupils.

At the JNP Science Centre, Mr Vishveshwara said, "Children are made to do science" and the students are drawn from classes of eight to even some from the BSc degree level. "The idea is to see that the children simply get down to basics and do and breathe science," by themselves with the others acting only as facilitators providing necessary guidance to them.

Mr Vishveshwara said the science centre could ultimately become a liaison institute for other scientific institutions and organisations so that the children could go and work in these institutions for higher scientific learning.

The children are charged a nominal fee for enrolling themselves in the science centre. The fee, according to Mr Vishveshwara, is being charged purely to cover the incidental charges like postages and other correspondence costs.

According to him, it is hoped to narrow this level to accommodate children belonging to as low as second standard and young adults to even the PhD level

where some of the professors could become their guides for undertaking research programmes.

The pupils learn and understand various aspects of science, astronomy and other science related subjects through interactive sessions over week-ends right through the year through the use of computers, laboratory equipments and help of two educators, engineers and professors who volunteer to impart the education.

The children will during these interactive sessions gain their knowledge through various activities which involves the use of graphics, video films, and actual tackling of various scientific related problems.

The Science Centre, which boasts of a computer laboratory, electronics, mechanical, mathematics laboratories will also be housing a physics, biology laboratories soon, is specifically aimed at children who wish to ultimately take up science in an active way and in the long run become scientists and contribute their mite to the cause of science and society.

IGNOU Admissions for 1996-97

The Indira Gandhi National Open University has announced admissions for the 1996-97 academic session. The courses being offered include a Master's degree in Business Administration, Distance Education, Computer Application and Library and Information Science; Postgraduate diplomas in Journalism and Mass Communication, Distance Education and Higher Education; Advanced diploma in Construction Management/Water Resource

Engineering leading to B.Tech. (Civil); diploma in Early Childhood Care and Education, Tourism Studies, Computers in Office Management, Nutrition and Health Education, Creative Writing in English/Hindi and Rural Development; and Bachelor's degree in Arts/Commerce/Science/Nursing, Library and Information Science, Computer Applications, Tourism Studies and B.A./B.Com. for ten-plus-two.

The university has also invited applications for certificate courses in computing, food and nutrition, nutrition and child care, tourism studies, nutrition for the community and organising child care services.

Students' handbook and prospectus can be obtained from all the Regional Centres of IGNOU or from director (student registration and evaluation) at IGNOU, Maidan Garhi, New Delhi-110068, by paying the required amount in cash or an IPO/Demand Draft drawn in favour of IGNOU payable at the city of the Regional Centre concerned or at New Delhi.

Completed application forms should reach the university by September 30, 1996.

UN Awards for Indian Scientists

Indian scientists have bagged the United Nations awards for a bio-technological method of making invert sugar and for making super grease.

Dr Sailen Ghosh of the Bhabha Atomic Research Centre, Bombay has won the gold medal of the World Intellectual Property Organisation, a UN agency, for his method of making invert sugar which goes into medicines,

confectionery and soft drinks.

Dr Anoop Kumar gets the WIPO silver medal for developing titanium grease at the Indian Oil Corporation. The new titanium-based grease is non-toxic unlike currently available lithium-based greases and also has superior characteristics such as high drop point, excellent water resistance, and anti-rust properties.

Also announced were three other Indian inventions which get Independence Day awards from the National Research Development Corporation.

Dr Arvind Bharti and Dr Vikas Kumar Saxena of the Defence Metallurgical Research Laboratory, Hyderabad have been jointly awarded Rs 50,000 for the development of process for improving fatigue crack growth resistance by continuous wave carbon dioxide laser treatment. Compared to carburizing, nitriding, surface rolling and shot peening, the new process offers considerable weight saving, enhanced safety and better performance for aircraft and spacecraft.

Messrs K Vishwanathan, C Subbiah, K Venkata Rao, VN Misale and P V Sai Suryanarayana of SHAR centre, ISRO, Sriharikota have been jointly awarded Rs 40,000 for the development of neutron radiography transfer imaging system for inspecting critical components in space craft and other rocket launching system.

British MBA Through Distance Learning

Strathclyde Graduate Business School's MBA through distance learning — launched recently in New Delhi and Mumbai by the British Council — will begin in October this year.

The duration of the course is two years and it will cost about Rs 4 lakh. Open to those with a minimum of two years' work experience, Strathclyde at present will admit only 20 students per batch.

Students are taught through self-contained study material, video material and text supported by intensive seminars by the UK faculty. In India, a distance learning centre at the British Council will offer, among other things, individual study packs with reference books from Strathclyde and workshop to develop management competence.

Awards for Eminent Scholars

Twenty-two eminent scholars are reported to have been selected for the award of certificate of honour for their contributions in the fields of Sanskrit, Pali, Arabic and Persian. Of these, 15 are Sanskrit, three Arabic, three Persian and one Pali scholars.

Besides sanad and a robe of honour, each awardee will be given a monetary grant of Rs. 20,000 a year for life.

The President will confer the awards at a special investiture ceremony to be held in New Delhi.

The Sanskrit awardees are : Dr. N.C.V. Narsimhacharya, Dr. Baidyanath Jha, Pandit Jawala Prasad Gaur, Shri Vishnu Dev Sankleshwar Pandit, Pandit Jankinath Kaul (Kamal), Shri Srikantha Ghanapati, Dr. R. Karunakaran, Shri S. Nilabir Sharma Shastri, Shri Babulal Shukla Shastri, Shri Shriram Bhikaji Welankar, Acharya Digambar Mahpatra, Acharya Dr. Narayan Shastri Kankar, Shri Tyagaraja Ramchandra Shashtri,

Shri Chandika Prasad Shukla and Dr. Srimohan Bhattacharya.

Dr. Mahesh Tiwari Shastri was awarded for Pali, Dr. Badruddin Al-Hafiz, Shri V. Abdul Rahim and Dr. Sayed Ehtisham Ahmad Nadwi for Arabic and Dr. Matin Ahmad, Dr. Samiuddin Ahmed and Shri Moheemmad Abdullah for Persian.

Goyal Prizes 1996

Goyal Foundation, Kurukshetra invites nominations for Goyal Prizes-1996 in the disciplines of Chemistry, Life Science, Physics and Applied Sciences. Each prize is of the value of Rupees one lac in addition to a gold medal (22 ct) weighing 20 gm alongwith a citation. Nominations for these awards may be made by distinguished persons and should be accompanied by relevant documents.

The awards will be conferred on the persons who are active research workers (the work done in the preceding 10 years will receive special attention) and are less than 65 years of age on first of January, 1997.

The Goyal Awards were instituted by Goyal Foundation, established in 1992 by Mr. Ram S. Goyal, an India-born American philanthropist.

The last date for receipt of nominations is 10th October, 1996. Further details may be obtained from Professor S.P. Singh, Convener, Advisory Board for Goyal Prizes, Department of Chemistry, Kurukshetra University, Kurukshetra-136119.

Symposium on Consciousness

The Guru Nanak Dev University recently organised a Symposium on National Consciousness. Participating in the discussion

Mr. Kuldip Nayyar, an eminent journalist, said that the objectives of the freedom struggle had not been achieved till today as these were expected before independence. We were yet to learn the values of a democratic secular society. He also elaborated upon the major issues which had crippled the Indian society.

Dr. Harbhajan Singh Soch, Vice-Chancellor, who presided, said that human values were supreme which should be protected at any cost.

Justice Rajinder Sachar said that protection of human rights was a must to build a democratic society. He stressed that the protection of human rights was a touchstone to know how civilized a society was. "The judicial activism, today, in this regard is conspicuously visible in the absence of a sense of justice in social and political life but judiciary alone cannot ensure the provision of human rights", he added.

Mr. Nikhil Chakravarty recalled the contribution of the people of this region in the freedom struggle. In spite of the brutality let loose by the British in Jallianwalahagh, the people continued their collective and peaceful struggle.

Mr. Vinod Mehta, another renowned journalist, suggested a review of the contribution of different institutions in promotions of democracy. He said the great tragedy for this Republic was "that all responsibility is left to the Government institutions". He appealed to the people to shed cynicism and assume the responsibility to make democracy work.

Mr. Pichori, a human right activist, participating in the discussion, asked the people not to accept the distortions in history

blindly. They should understand the parochialism behind such distortions.

ABB Research Chair

Asea Brown Boveri Limited (ABB) in India is reported to have instituted a research chair in Electrical Engineering at the Indian Institute of Science (IISc), Bangalore. ABB is a world leader in electrical engineering and with a major presence in India.

The ABB chair professor will be appointed by the IISc from the faculty members of High Voltage Engineering and Electrical Engineering Departments of the Institute, according to its norms. The ABB chair professor or any of the IISc faculty members of the Institute may participate in mutually beneficial areas of work. These could take the form of short term course, seminars, technical units, HRD programmes or coordination of projects. The institute on its part will also explore the possibility of admitting students in areas of sponsored research.

According to ABB, increasing the interaction between academia and industry, leading to improved quality of professional expertise within the industry in general and organisations in particular can be of immense benefit to society at large. This mutually beneficial tie-up would provide a useful learning experience and medium for ABB to continue its contribution to social development.

PG Course in Public Health

Sri Chitra Tirunal Institute of Medical Sciences and Technology, a premier medical research centre under the department of science and technology, proposes to start India's first-ever interna-

tionally comparable master of public health (MPH) degree from January next. This was disclosed by the institute Director Dr. K. Mohandas in Thiruvananthapuram recently.

He said that the McArthur Foundation of the United States had given a three-year grant of \$400,000 to the institute to secure the services of visiting faculty members from abroad for the MPH programme.

The 18-month course would be started at the Achutha Menon Centre for Health Science Studies being set up in the Government Medical College premises. Sri Chitra institute also proposed to start a Ph.D course in public health from 2002, he added.

Explaining the relevance and need for a MPH course, Prof. T.N. Krishnan said the MPH was the equivalent of an MBA in business and industry.

Business English Certificate Exam

The British Council proposes to administer the Business English Certificate Examinations (BEC) in India. The certificate is aimed at providing a measure of proficiency in English in business and educational institutions all over the country.

The Council will administer the examinations on behalf of the University of Cambridge Local Examinations Syndicate which is one of the world's leading educational assessment agencies.

Highlights of such launch programmes in different cities include a presentation on BEC, an opportunity to interact with faculty from Cambridge and an exhibition of business English books and learning aids.

Einstein Bhavan at Santiniketan

Santiniketan will soon have a centre for German literary studies on the lines of Visvabharati's Cheena Bhavana. To be called Einstein Bhavan, it will be built with funds raised in both India and Germany. This was revealed by one of the project's Indian organisers, Mr P J Ghosh, in New Delhi recently.

This year is being celebrated as the 75th anniversary of Tagore's visit to Germany, which has always had a special place in the Gurudev's heart.

It was at Humboldt University in Berlin that he had met Albert Einstein, and their relationship flowered despite the difficulties of life in Nazi Germany.

Visvabharati's Vice-Chancellor, Dr Dilip Sinha, and Dr Sunil Sen, an Indian Scholar living in Germany, took the lead six months ago to set up a committee to celebrate the anniversary.

Incidentally, 1996 is also the 75th anniversary of Visvabharati itself, and an exhibition on the growth and development of the university is proposed to be organised at Santiniketan.

News from Agricultural Universities

Scientists Industry Interface

The Punjab Agricultural University will encourage its scientists to work with industry on deputation basis in order to have

a close interface with agriculture and industry. This was disclosed by Dr Amarjit Singh Khehra, Vice-Chancellor, PUA while pre-

siding over a meeting held recently in Ludhiana with agri-business committee of Confederation of Indian Industries (CII) and Mr Uzi Wellish, counsellor for agricultural affairs, Embassy of Israel.

The Vice-Chancellor emphasised that agro industry in the state would never progress unless the farmers get interested to receive benefit. Only those countries progress where investment in research was encouraged. He exhorted the industry to finance research on contract basis in order to boost agro-industry in the state.

Dr Khehra further stated that the second green revolution was in the offing. Industry would play a significant role in the revolution. He called on the scientists and industrialists to gather know-how available anywhere in the world. The Vice-Chancellor disclosed that the university had already re-oriented its research programmes to satisfy the requirements of industries with regard to specifications of raw material and post-harvest technologies for value addition. Keeping in view the importance of floriculture and fisheries in the state, separate department had been established at PAU to strengthen research in these spheres.

Mr Uzi Wellish appreciated the research work done at the PAU. He presented detailed view of agricultural system in Israel.

Mr Gokul Patnaik, Secretary, Industries, Punjab, emphasised on synchronising the path of agriculture and industry. He expressed concern over the problem of residue of chemicals which was a hindrance in the export of various crops.

Mr Rakesh Chopra, chairman, agri-business sub commit-

tee (CII), emphasised on making major strides in agricultural development in the state. He presented a brief outline of agrotech 1996 scheduled to be held at Chandigarh from November 27 to December 1.

Dr. S.S. Bains, Director of Agriculture, Punjab, expressed concern on lowering of water table in the central districts of the state. He said that the attack of bollworm and white fly on cotton had caused a lot of damage to the crop.

Sudanese VC Visits HAU

The agricultural technologies developed at Chaudhary Charan Singh Haryana Agricultural University (CCSHAU) could be easily adopted in Sudan as the soil and agro-climatic conditions of both were almost similar, observed Prof. Mubarak Mohamed, Vice Chancellor of University of Gezira, Sudan. Prof. Mohamed was in Hisar recently on a one-day visit of the university under the cultural exchange programme between the two countries.

He said that due to economic and other reasons Sudanese farm-

ers could not go in for Hi-Tech agricultural technology on large scale. However, technologies generated at CCSHAU in the fields of agriculture and animal science could be used as these were effective as well as low cost.

During his visit, the Sudanese Vice Chancellor was taken around various laboratories. He had interactions with university experts and gathered detailed information of the technologies developed by the university.

Prof. Mohamed also called on the Vice Chancellor, Dr. J.B. Chowdhury, who explained the visiting Vice-Chancellor the achievements of the university, its functioning and the research priorities fixed for the present and the future.

Dr. Chowdhury said that to maintain sustainability in agricultural production and protect environment, emphasis had been laid on the development and extension of bio-technology. He also said that priority had been given to educate the farmers in soil-water management as the agricultural production in state was being threatened by the problems of water logging and salinity.

News from UGC

Countrywide Classroom Programme

Between 16th and 22nd September, 1996 the following schedule of telecast on higher education through INSAT-ID under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 1.00 p.m. to 2.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission	
6.00 a.m. to 7.00 a.m	
17.9.96	"The Silver Beaters"
	"Your Form is My Creation"
	"Acupuncture:"
19.9.96	
	"Communication Technology: Printing Highways"
	"Coconut Cultivation-Part I"
	"Sea Me We"
21.9.96	
	"Pest Story-Part II"

"Ayurveda"

"All are Neighbours: Protection of the Environment in Germany"

22.9.96

"Science Quest 95-96 - Part II"

"Blue Pottery: A Marvel in Quartz"

"The Week Ahead"

Ind Transmission

1.00 p.m. to 2.00 p.m.

16.9.96

"The Week Ahead"

"Question Time"

"Physics of Music - III: Deriving Music Mathematically"

17.9.96

"Communication Technology: Printing Highways"

"Acupuncture: On Pins and Needles - Part III"

18.9.96

"Black Money: Cancer to Economy"

"Chhatri Architecture of Holkars - Part II"

"The Tale of Fishes Serving Deadly Dishes - Part II"

19.9.96

"Monkeys at Tughlaqabad - Part I"

"Coconut Cultivation - Part II"

"Azilian Pebbles"

20.9.96

"Pest Story - Part III"

"The Young Ones: Let Them Be Them"

"The Great Pyramid: A Tomb or an Observatory"

21.9.96

"Science Quest 95-96 - Part III"

"Kurja: Anthropoides Virgo (Rajasthani Love Bird)"

"Aerospace Plane"

Hindi Telecast

प्रातः 6.00 से 6.30 बजे तक

16.9.96

"एक वृक्ष-एक लता:—लुनेरे की सम्पदा"

"मानव जीवन में सहयोग - भाग 1"

18.9.96

"सत कबीर - भाग 3"

"फैलता जहर प्रदूषण का"

20.9.96

"आधुनिक कबड्डी: खेल के नियम - भाग 2"

"मस्तिष्क मृत्यु"

also possible.

Applications should reach DAAD, 176, Golf Links, New Delhi-110003 by October 15, 1996. Successful candidates will be notified only in January/February of 1997.

B. CSIR (India)-DAAD Exchange of Scientists Programme ("Indisch-Deutsches Wissenschaftler austauschprogramm")

This programme is open to CSIR scientists for visits of between two and three months to research institutes or universities/"Fachhochschulen" in Germany, to carry out specific research projects.

Conversely, German scientists suggested by their Indian counterparts or nominated by DAAD may be sponsored for visits of between 14 days and three months to CSIR institutes in India.

Under the provisions of this reciprocal programme, the sending side takes charge of international airfare, and the receiving side shoulders the costs related to local hospitality.

Specific Eligibility Requirements and Additional Provisions. Interested faculty must be nominated or endorsed by CSIR.

DAAD requires 10 to 12 weeks notice before being able to issue the formal letter of invitation.

Direct application to DAAD, New Delhi is not possible.

C. Study Visit Programme for Madras IIT Faculty ("Sonderprogramm IIT Madras")

Upon nomination by the Director of IIT Madras, qualified faculty from any department may apply for short term study visit grants, for a period of upto three months each, to Germany.

Special provision: The international airfare is borne by DAAD.

Direct application to DAAD, New Delhi is not possible.

News from Abroad

DAAD Fellowships for Indian Faculty

The German Academic Exchange Service (DAAD) offers Fellowships Programmes for Indian Faculty and Scholars. The essential prerequisites for these programmes are that only scholars and faculty on active duty can be considered. Emeriti are not eligible. The applicants must have recent-dated correspondence — not older than 6 months — from their counterparts at German universities, "Fachhochschulen", or research and the suggested time schedule. At least two-thirds of the stay is to be spent at one particular Institute in Germany.

A. Study Visits ("Studienaufenthalte")

DAAD supports short study

and research visits up to a total of three months by Indian scholars and faculty to universities, "Fachhochschulen", and research institutes in Germany. Invitations are extended with a grant to cover maintenance and, where applicable, domestic travel in Germany.

The international airfare is to be borne by the Indian side.

Candidates for this programme are normally proposed by the University Grants Commission (UGC), New Delhi, who will advertise this programme through its own channels and set its own deadlines. Applications to DAAD, New Delhi directly are

BOOK REVIEW

A Comprehensive Treatise

H. R. Chopra*

N.R. Satyanarayana and R. Satyanarayana, Eds. Problems of Information Science. New Delhi, New Age International, 1996. Pp. ix+186. Rs. 200/-.

In the present age of information explosion and technological advancements, information science has assumed a very significant role. In order to find the required information quickly, accurately, comprehensively, pinpointedly and from various access points, information technology has come to our help. Computers, satellites, electronic devices, communication technology, CD-ROM technology, databases and networks at various levels have completely changed the traditional role of librarians. Now the information specialists handle the storage and retrieval of information for the scientists and researchers.

The present publication comprises 19 papers presented at a national seminar on "Problems of Information Science" recently organised by Lucknow University. The entire work has been divided into six inter-related parts. Part one is entitled "Introduction" which includes three papers on understanding information science and problems thereof. Part two deals with "Information Science, Conceptual Framework", which covers four papers dealing with the domain of information science, information systems and the role of librarians in information science. Part three includes two papers dealing with various facets of the "Management of Information Systems and Services".

Part four is entitled "Storage Retrieval and Dissemination of

Information". It includes four papers dealing with problems for developing an integrated library and information network for India, economics of a knowledge industry, library planning, and academic libraries & information technology in India. Part five deals with "Automated Handling of Information Systems and Services" which lists three papers on design & development of ABA database using micro CDS/ISIS version 2.3, optical disc technology, and design & development of computerised circulation control for a University system. Part six pertains to "Education for Information Science" which includes three papers, discussing the basic issues relating to teaching of Information Science so that the librarians can handle information services in the electronic era. List of contributors has been provided at the end, followed by a comprehensive alphabetical index which refers to the page number of the text.

It is a collection of very good papers contributed by experienced library professionals, information specialists and teachers of library & information science. Almost all the major facets of information science have been covered and problems thereof have been highlighted. Necessary references with full bibliographical details have been provided at the end of most of the contributions. An alphabetical index has also been provided at the end of the book which refers to the relevant page number in the text. This serves as key to the pinpointed

information and facilitates quick location of the required information.

Some minor errors and drawbacks can be noticed in the publication. For example, the references listed at pages 145-46, 154 and 178 have been arranged according to "surname" while all other references have been arranged according to "forenames" of the authors. Uniformity and consistency throughout the publication could have been maintained by the editors. Similarly, the heading of the "author-title added entry" and the "tracings" shown in the example at page 68 is not identical and creates confusion. In the list of contributors given at page 180, Dr. Sewa Singh has been shown as "Professor" whereas he is "Reader". This can mislead the readers. The data of the contribution entitled "Economics of a knowledge industry..." is very fascinating, but all the three tables given at pages 96 and 98 give the statistics for the years 1982-83 to 1986-87 only. In the present publication of 1996 (pertaining to information science), readers would expect to ascertain latest or recent data/statistics for the years 1987-88 onward, which has not been provided. The recommendations of the seminar have also not been included in this publication for the benefit of the readers. But all these flaws are not very serious and do not bring down the quality of the work in any way.

The book is nicely printed and very well presented. The quality of paper used, and the format of the publication is also very good. It gives comprehensive treatment of various facets of information science, bringing out the problems related thereto, from Indian point of view. This publication is of vital importance for all types of libraries and is expected to be well taken by those for whom it is meant.

*Reader, Department of Library and Information Science, Panjab University, Chandigarh-160 014.

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in the AIU Library during August 1996

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Macpherson, R J S. (1996). Educative accountability policy research : Methodology and epistemology. *Ednl Admn Q* 32(1), 80-106.

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Smeby, Jens-Christian. (1996). Disciplinary differences in university teaching. *Studies in Hr Edn* 21(1), 69-79.

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CLASSIFIED ADVERTISEMENTS

DEPARTMENT OF FORESTRY NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE & TECHNOLOGY

Applications are invited for JRF/SRF/RA (one) in a CSIR scheme "Assessment and monitoring of soil degradation in humid tropics of Arunachal Pradesh using biological and biochemical techniques" for a period of three years.

Qualifications: RA—Ph.D. in Botany/Forestry/Life Sciences/Soil Science having research publications in the area relevant to the scheme. SRF—M.Sc. with minimum 55% marks in Botany/Forestry/Life Sciences/Soil Science having two years research experience. JRF—M.Sc. with minimum 55% marks in Botany/Forestry/Life Sciences/Soil Science having NET/GATE test. Candidates having experience of remote sensing techniques application in soil mapping will be given preference. Relaxation in age upto 5 years for SC/ST/OBC and woman candidates. Fellowship: RA—Rs. 2800-100-3300/-, SRF—RS. 2800/-, JRF—Rs. 2500/- p.m. fixed. HRA as per institute norms. JRF/SRF will be registered for Ph.D. degree.

The interested candidates may send their bio-data with supporting documents to Dr. S.C. Tiwari (PI), Department of Forestry, NERIST, NIRJULI-791109 (Itanagar), Arunachal Pradesh within 30 days from the date of appearance of advertisement.

**SRI CHANDRASEKHARENDRA
SARASWATHI VISWA
MAHAVIDYALAYA
(DEEMED UNIVERSITY)**

ENATHUR, KANCHIPURAM - 631 552

In order to promote the research activities on AdiSankara Advaita Philosophy, the Deemed University has established "Chairs" in the Department of Philosophy and Sanskrit.

Applications are invited from Scholars of eminence in Philosophy/Sanskrit for the post of Professors, in the Deemed University. The selected Scholars will conduct

independent research on Advaita Philosophy and also guide research students for their Ph.D. Degrees.

Applications are also invited from Post-Graduate students in Philosophy/Sanskrit, with good academic records, for the award of Research Fellowships on AdiSankara Advaita Philosophy, who can register for their Ph.D. Degrees. Honorarium for the Professors will be fixed in

the range Rs. 5,000/- and Rs. 10,000/-p.m., according to their qualifications and experience

Bio-data with details of Age, Qualifications, Experience, Research guidance etc. may be sent to The Registrar, Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya (Deemed University), Enathur, Kanchipuram - 631 552, on or before 18th September, 1996.



KOTA OPEN UNIVERSITY RAWAT BHATA ROAD, KOTA

NO.F-2/KOU/Est/T/11(42)/96/15383

Dated : 21/08/96

ADVERTISEMENT NO. 2/96

Applications are invited for the undermentioned posts so as to reach this office on or before 30/09/96 in the prescribed form obtainable from the office of the Registrar, Kota Open University, Rawat Bhatta Road, Kota- 10 on production of Indian Postal order of Rs. 11/- in favour of the Registrar, Kota Open University, Kota or on Cash Payment (I.P.O. of Rs. 21/- if the form is required by post) upto 20/09/96.

1. PROFESSOR (4500 - 7300)	02 Posts-	01 Pol. Science, Un- reserved 01 Computer Science -do-
2. Associate professor (3700 - 5700)	04 Posts -	01 History -do- 01 Chemistry -do- 01 Library Science -do- 01 Physics -do-
3. Assistant Professor (2200 - 4000)	02 Posts -	01 Hindi -do- 01 Food and Nutrition & Women's Studies -do-

TERMS AND CONDITIONS FOR APPLYING FOR ABOVE POSTS

1. Retired persons need not apply.
2. In case of persons already in employment, their applications must be sent through proper channel.
3. Candidates are required to apply separately for each post on prescribed form.
4. The details of qualifications etc. will be available with the application form.
5. Applications received on plain paper or after due date or without attested copies of marks-sheets, experience certificate, caste certificate etc. will not be entertained in any case.
6. The University also reserves the right to consider persons in absentia for the post of PROFESSOR (only) even though they have not applied formally for the post.
7. The University reserves the right to increase or to decrease the number of posts.
8. The selection committee may relax any of the eligibility conditions in outstanding cases subject to the final approval of the Board of Management.
9. It is not obligatory on the part of the University to call every candidate for interview who possess the requisite qualifications.
10. Persons selected for the post applied for can be posted to any of the Centre of the University or any office thereof.
11. No T.A. /D.A. Will be given for attending interview if called for.

REGISTRAR

**HIMACHAL PRADESH
UNIVERSITY
'RECRUITMENT BRANCH'
SHIMLA-5**

Applications are invited (on prescribed form) for the post of PRINCIPAL, University Evening College, Shimla, in the pay scale of Rs. 3700-5700 (likely to be revised) so as to reach the Assistant Registrar, Recruitment alongwith crossed Indian Postal Order of Rs. 100/- (Rs. 25/- for S.C./S.T.) payable to the Finance Officer, by 30th September, 1996.

ESSENTIAL QUALIFICATIONS:

A Lecturer having 50% marks in Master's degree in any one of the following subject: English, Hindi, Sanskrit, History, Mathematics, Economics, Political Science, Public Administration & Commerce/Bus. Admn. with 10 years service duly approved by the University in case of Non-Govt. Colleges/Govt. Colleges affiliated to/associated with or maintained by the University.

Application form can be obtained from the Assistant Registrar, Recruitment on payment of Rs. 25/- in cash or by making a written request to him accompanied by self-addressed envelope of 23x10 cms. with postage stamps affixed worth Rs. 2/- and a postal order of Rs. 25/- drawn in favour of Finance Officer of the University.

Candidates already in service should send their applications through proper channel.

The University reserves the right to fill up or not to fill up the post or to call only suitable candidates for interview.

The earlier applications against Advt. No. 2/95, dated May 8, 1995 shall not be entertained.

NOTE: Applications received on plain paper, not in conformity with the requirements as specified above, and received after the last date will not be entertained.

HPU/PRO/77

REGISTRAR

**UNIVERSITY OF KASHMIR
NOTICE**

In Partial modification of advertisement published earlier in *University News* dated 12 August 96, it is notified for the information of all concerned that last date to obtain/deposit forms for various posi-

tions shall be 25-9-1996. Moreover prescribed forms can now be also obtained/deposited from/with Dy. Registrar, Kashmir University, SUB-OFFICE JAMMU, H.No.-20, Sector-5A, TRIKOTA NAGAR, JAMMU-180003.

PUBLIC RELATIONS OFFICER



स्वामी रामानंद तीर्थ
मराठवाडा विद्यापीठ, नanded

**SWAMI RAMANAND TEERTH
MARATHWADA UNIVERSITY,**

NANDED

"DNYANTEERTH", VISHNUPURI,
NANDED - 431 603.

Applications are invited for the following posts in the University.

1. REGISTRAR : (One Post)
2. LIBRARIAN : (One Post)
3. PROFESSOR : (Four Posts) : School of Chemical Sciences - (01), School of Life Sciences - (01), School of Social Sciences - (01), School of Earth Science (01).
4. READER : (Five Posts) : (I) School of Chemical Sciences - 01 (NT 1/2/3), (II) School of Life Sciences - 02 (1-SC., 1-Open), (III) School of Social Sciences - 01 (S.T.), (IV) School of Earth Science 01 (V.J.).
5. LECTURER : (Two Posts) : (I) School of Chemical Sciences - 01 (Open), (II) School of Social Sciences - 01 (OBC).

NOTE: 01. Pay Scales : (1) Registrar - 4500-7300, (2) Librarian - 4500-7300, (3) Professor - 4500-7300, (4) Reader - 3700-5700, (5) Lecturer - 2200-4000.

02. Candidates should apply separately for each post.
03. Candidates belonging to reserved category must produce Caste Certificate issued by the competent authority of the Government.
04. If suitable reserved candidates are not available, other candidates will be considered for appointment for 06 (six) months and likely to be continued for another 06 (six) months.
05. Conditions may be relaxed in case of exceptionally suitable candidates.
06. Preference will be given to women candidates to the extent of 30% of the above posts in each cadre.
07. Specific reserved category of candidates from Maharashtra alone will be considered for reserved posts.
08. Prescribed application form (a set of 10 copies) can be had from the University Office in person on payment of Rs. 200/- in cash or by post on payment of Rs. 200/- by D.D. in favour of the Registrar, Swami Ramanand Teerth Marathwada University, Nanded, alongwith a self-addressed cloth bound envelope (25 cm x 18 cm) bearing postage stamps worth Rs. 15/- (Rupees fifteen only).
- Forms will be despatched under certificate of posting. Applications in prescribed form, complete in all respects should reach the undersigned on or before 21st September 96. The envelope containing the application should be superscribed - "Applications for the post of.....". Details regarding specialisations/qualifications are available in the accompaniment, supplied with the application form.
09. Applications shall not be entertained if found incomplete/received late/not through the proper channel/not signed by the applicant.
10. Selection committee reserves the right to select highly qualified candidates in absentia.
11. Interview of candidates will be preceded by exposition/colloquium.
12. University will not be responsible for any postal lapses or delay.

Advt No. TP-2/96-97

Date : 29.8.96

**Dr. Vijay Khole
REGISTRAR**



UNIVERSITY OF DELHI

DR. B.R. AMBEDKAR CENTER FOR BIOMEDICAL RESEARCH

P.O. BOX-2148, DELHI - 110 007

DU/ACBR/Estab/Advt. 01/96-97

The University of Delhi has recently established the above said Center for Biomedical Research, as a University maintained Institution for imparting instructions and to promote excellence in research in Biomedical Sciences, in collaboration with other departments/institutes in India and abroad. The Center is dedicated to research and graduate training (leading to M. Phil and Ph. D) in Biomedical Sciences and to serve as a prototype of Post Doctoral training in Synthetic Chemistry, Biochemistry, Elementology, Toxicology, Biochemical Genetics, Biotechnology, Molecular Biology, Drug Metabolism and Immunochemistry etc.

The Center inter-alia works out environmentally compatible and industrially feasible economic routes for certain functional chemicals. With a view to accelerate the activities of the Center under the able leadership of Prof. Sukh Dev and Prof. Gurbakhsh Singh, the Center invites applications for the following posts:

S.No.	Name of the post	Pay Scale	No. of Posts
1.	Research Scientist 'B'	Rs. 3700-125-4700-150-5700	2
2.	Research Associate	Rs. 2800-3000*	2
		Rs. 3300-3800*	
		Rs. 3750-4375*	
		Rs. 4325-5000*	
3.	Technical Assistant	Rs. 1400-40-1800-50-2300	2
4.	Private Secretary	Rs. 2000-50-2400-60-3500	1
5.	Stenographer	Rs. 1200-30-1440-40-2040	1
6.	Lab. Attendant	Rs. 950-25-1200-30-1800	2

*depending on the recommendations of the Selection Committee

Qualifications and Experience:

For S. No. 1. Must have an outstanding academic/research career with Ph. D in Synthetic Organic Chemistry, and independent relevant research experience of not less than 5 years.

For S. No. 2. Must have an outstanding academic/research career with Ph. D in Synthetic Organic Chemistry, preferably with relevant Post-doctoral research experience.

For S. No. 3. to 6. Details of educational qualifications, experience etc may be had from the office of the Center during working hours.

TERMS AND CONDITIONS:

1. All the appointments shall be on contractual basis.
2. All the above posts, except that of Research Associate, shall carry DA, CCA, HRA etc as may be admissible under the rules in force in the University from time to time.
3. Reservation for SC/ST/OBC will be as per University Guidelines.
4. Higher initial start may be considered by the Selection Committee for deserving candidates.
5. Applications (separate for each post) accompanied by attested copies of degrees, other certificates, marksheets, published research articles etc. should be addressed to the Director, Dr. B.R. Ambedkar Center for Biomedical Research, University of Delhi, (Old USIC Bldg.), Delhi-110 007 so as to reach latest by September 30, 1996.
6. The Center reserves the right not to fill up any of these posts advertised.
7. Canvassing in any form by or on behalf of candidate will disqualify.
8. Candidates from outside Delhi called for interview will be paid to and fro single 2nd Class rail fare.

NOTE : The Center reserves the right to consider names of suitable candidates who may not have even applied.

PROF. RAMESH CHANDRA
DIRECTOR

August 20, 1996